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Associations among health-related behaviours: sociodemographic variation in Finland

Summary

Objectives: The study examines sociodemographic variation in associations and co-occurrence of health behaviours that contribute to multifactorial chronic diseases.
Methods: Mantel-Haenszel odds ratios were used to examine pairwise associations among smoking, alcohol use, physical activity, and diet across categories of sociodemographic characteristics. Breslow-Day test for homogeneity was used to test for sociodemographic differences. In addition, co-occurrence of each two unhealthy behaviours was examined across sociodemographic groups using nationwide population survey data from 26 014 Finnish adults.
Results: Most of the health behaviours examined were interrelated and sociodemographic differences in the associations were few. Differences were inconsistent for all sociodemographic characteristics. Variation was observed only in the strength of the associations, not in their direction. However, due to unequal distribution of the individual behaviours, co-occurrence of unhealthy behaviours varied strongly across sociodemographic groups.
Conclusions: Associations between health behaviours were relatively similar across sociodemographic groups. Since co-occurrence of unhealthy behaviours depends on the prevalence of individual unhealthy behaviours and the strength of their association, their co-occurrence in any particular sociodemographic group was primarily determined by the prevalence of individual unhealthy behaviours.

Health-related behaviours markedly contribute to chronic diseases, which in the industrial societies constitute the major causes of morbidity and mortality (European Commission 1996; Murray & Lopez 1996). Therefore, current health promotion policies seek to encourage healthy behaviours, like a healthy diet and regular physical activity, and to discourage unhealthy behaviours, like smoking and excessive alcohol use. For developing and targeting public health efforts that aim at preventing harmful behaviours, information on the occurrence of such behaviours in different subgroups of the population is needed.

Since the major chronic diseases may be affected by various ways of behaviour and each behaviour in turn may be related to several disease outcomes, understanding associations between health behaviours as well as their co-occurrence is crucial. Yet, the majority of research has concentrated on one behaviour at a time. There are reasons to expect that health behaviours would be interrelated. On the other hand, health behaviours also have intrinsic differences, suggesting that people may be inconsistent in their health behaviour. All health behaviours do not have to be linked with each other in a theoretically meaningful way. In previous research several positive associations between health behaviours have been observed, yet some behaviours seem not to be associated and some associations are even inverse.

Individual health behaviours show clear differences by such sociodemographic characteristics as gender, age, educational level, marital status, and area of residence (Arinen et al. 1998; Aromaa et al. 1999). Different hypotheses relate to each of these characteristics and to the mechanisms through which they may operate (Duncan et al. 1993; Umberson 1992; Kaplan & Keil 1993). While some of the hypotheses are behaviour-specific others may apply to a wider range of behaviours. Since the prevalence of individual health behaviours varies across sociodemographic groups, it is plausible

to assume that sociodemographic variation can be found also in their associations and co-occurrence. Yet, few previous studies have examined whether health behaviours are similarly associated in different population groups.

In previous research the concept of health-related lifestyle has been used to refer to the whole of socially structured behaviours that are relevant for health (Cockerham et al. 1997; Abel 1991; Dean 1988; Green & Kreuter 1991). The concept implies that health behaviours – or at least fractions of them – tend to be interrelated. Furthermore, health behaviours are seen as open to individual choice but in part socially conditioned. According to one formulation (Cockerham et al. 1997), health-related lifestyles are "collective patterns of health-related behaviour based on choices from options available to people according to their life chances". Health-related lifestyles thus consist of a set of interrelated behaviours that are collective in the sense that they are closely linked to different sociodemografic characteristics (Abel et al. 2000).

The purpose of this study was to examine sociodemographic variation in the associations among daily health behaviours in Finnish men and women. Following the framework outlined by the lifestyle approach, we included several health behaviours and several sociodemographic characteristics in the same study. Six pairs were formed from the health behaviours considered, which were smoking, alcohol use, physical activity and diet, and the pairs were examined in parallel by several sociodemographic characteristics. Thus, we sought to put the health behaviour pairs in a reciprocal context to be better able to grasp the sociodemographic similarities and dissimilarities that might emerge. Furthermore, examining all possible pairs of behaviours systematically in different sociodemographic groups provides an overall view of their associations. In addition, we examined co-occurrence of each two unhealthy behaviours across the sociodemographic groups. The distribution of the behaviours within the sociodemographic groups is determined by two factors together: the prevalence of the individual unhealthy behaviours and the strength of their association. Sociodemographic differences in the prevalence of individual unhealthy behaviours can therefore be expected to provide variation to their co-occurrence.

Methods

The data derive from cross-sectional surveys repeated annually within the project for Monitoring Health Behaviour among the Finnish Adult Population (Helakorpi et al. 1999). These nationwide surveys have been conducted on independent samples of 5000 Finns ranging in age from 15 to 64 years

and drawn randomly from the National Population Register. Postal questionnaires reached response rates between 69% and 76%. For the present study data from the years 1991 to 1998 were pooled. This could be done since the trends in health behaviours have been quite stable and their sociodemografic changes small (Helakorpi et al. 1999; Lahelma et al. 1997). Altogether 12192 men and 13822 women aged 20 to 64 years were included in the analyses.

The questionnaires were structured and included the same questions and response alternatives from year to year. Four health behaviours typically practised on a daily basis were taken under examination. Smoking status was determined on the basis of several questions concerning smoking history and the last smoking occasion. The sum of weekly consumption of beer, long drinks, wine and spirits was calculated to estimate alcohol consumption. Physical activity was assessed by asking the frequency of leisure time exercise for at least 30 minutes/session. Although critique can be directed towards additive scoring of diverse health-related practices (Slater & Linder 1988; Dean & Salem 1998), as a measure of diet a combination of three components that are central for the Finnish public health nutrition (Valtion ravitsemusneuvottelukunta 1998) was preferred to any single food choice. Thus, dietary behaviour was measured by the following components: having fresh vegetables less than three times a week, using butter on bread or drinking whole milk, eating less than five slices of bread a day.

All health behaviour variables used in the study were dichotomised. Reporting to have smoked regularly for at least one year and having smoked last within two days, belonging to the highest quartile of alcohol use (corresponding to more than 12 weekly units for men and more than five units for women), engaging in leisure-time physical activity less than once a week, and having two or three unhealthy dietary choices were considered unhealthy behaviours. Sociodemographic variables that were available included age, educational level, marital status and the level of urbanisation of the living area, and these were each divided into three categories. The distribution of the behaviours by the sociodemographic variables is shown in Table 1. The results are consistent with previous reports: either the distributions were relatively even or less advanced groups engaged in unhealthy behaviours more often than those in more advanced positions. As expected, the educational gradient of alcohol use was positive.

Since men and women can be expected to differ in their health behaviour, all analyses were performed separately for each gender. The associations between health behaviours were examined using the Mantel-Haenszel odds ratios (Rothman 1986), which are presented with 95% confidence

Table 1 Number of respondents and prevalence of individual unhealthy behaviours by sociodemographic background variables and gender (%)

	N		Smoking %		High alcohol use %		Inactivity %		Unhealthy diet %	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age group										
20–34	3914	4415	34	23	28	28	28	23	21	19
35–49	4600	5307	35	23	31	30	30	24	19	15
50–64	3678	4100	27	12	19	17	23	20	26	21
Education										
0–9 years	3777	3580	36	22	22	18	30	23	30	25
10–12 years	4007	4055	38	25	28	26	29	23	21	19
13+ years	4216	5961	24	16	31	30	23	22	14	13
Marital status										
Married	8313	9698	30	18	25	24	27	23	19	17
Single	2947	2376	35	24	30	31	27	21	27	19
Divorced	879	1689	49	27	35	27	26	22	30	23
Area										
Capital area	2010	2637	30	24	34	37	26	25	17	15
Other cities	5631	6350	34	21	28	26	26	22	20	17
Rural areas	4551	4835	31	16	22	20	30	22	25	21

intervals. The odds ratio measures an association between two variables by comparing the prevalence of one dichotomous variable according to the presence or absence of another dichotomous variable. Values greater than one indicate a positive association and values less than one an inverse association between the variables. The Breslow-Day test for homogeneity (Breslow & Day 1980) was used to test whether associations between health behaviour pairs differed by sociodemographic characteristics. Stratum-specific odds ratios were calculated if the Breslow-Day statistic indicated sociodemographic differences.

Co-occurrence of unhealthy behaviours across sociodemographic groups was examined by comparing the proportion of those with two unhealthy behaviours to those with only one of them. This proportion was calculated separately for both of the individual unhealthy behaviours. Because having two unhealthy behaviours is influenced by the prevalence of each of the individual unhealthy behaviours, examining only one of these proportions at a time may be misleading. To avoid this problem the proportions calculated in the opposite directions are presented side by side.

use and physical inactivity was weaker but positive, reaching borderline statistical significance for women. The association between high alcohol use and unhealthy diet was inverse, but for men statistically non-significant.

Sociodemographic differences in the associations between health behaviours were few. Only in nine out of 48 possible associations statistically significant differences were observed (Tab. 3). For men, the association between high alcohol use and physical inactivity was the weaker the higher the educational attainment. Smoking and unhealthy diet were more strongly associated among the older and among those living in more urbanised areas. The association between smoking and high alcohol use was stronger in the less urbanised areas. For women, the association between smoking and high alcohol use showed most variation; it was strongest among the least educated, single women and in the less urbanised areas. Furthermore, the association between smoking and unhealthy diet was weakest among the least educated, and the one between high alcohol use and physical inactivity was found only in the rural group.

Results

Table 2 shows the associations between health behaviours in the whole study population. The strongest association was observed between smoking and high alcohol use. This association was especially strong among women. The associations between smoking and other unhealthy behaviours were also positive, as was the one between physical inactivity and unhealthy diet. The association between high alcohol

Table 2 Associations between health behaviours (odds ratios with 95 % confidence intervals) by gender

	Men	Women
Smoking and alcohol	2.14 (1.97–2.33)	2.68 (2.46–2.92)
Smoking and inactivity	2.16 (1.99–2.36)	1.70 (1.55–1.87)
Smoking and unhealthy diet	1.58 (1.44–1.73)	1.51 (1.36–1.68)
Alcohol and inactivity	1.25 (1.15–1.37)	1.10 (1.00–1.20)
Alcohol and unhealthy diet	0.95 (0.86–1.05)	0.82 (0.74–0.91)
Inactivity and unhealthy diet	1.82 (1.65–2.01)	1.62 (1.46–1.79)

Table 3 Sociodemographic differences in the associations between health behaviours by gender. Odds ratios (with 95 % confidence intervals) have been presented only for the pairs in which Breslow-Day statistic showed differences at 5 % risk level

Background variable	Men		Women	
Age group	**smoking*unhealthy diet**			
20–34	1.40 (1.19–1.65)			
35–49	1.64 (1.41–1.92)			
50–64	1.93 (1.63–2.28)			
Education	**alcohol*inactivity**		**smoking*alcohol**	**smoking*unhealthy diet**
0–9 years	1.48 (1.26–1.74)		3.72 (3.12–4.43)	1.19 (0.99–1.43)
10–12 years	1.34 (1.15–1.55)		2.56 (2.20–2.98)	1.66 (1.39–1.98)
13+ years	1.10 (0.94–1.28)		2.69 (2.34–3.09)	1.51 (1.24–1.84)
Marital status			**smoking*alcohol**	
Married			2.40 (2.15–2.68)	
Single			3.38 (2.79–4.09)	
Divorced			2.75 (2.18–3.46)	
Area	**smoking*unhealthy diet**	**smoking*alcohol**	**smoking*alcohol**	**alcohol*inactivity**
Capital area	2.13 (1.67–2.73)	1.64 (1.34–2.00)	1.98 (1.65–2.37)	0.95 (0.79–1.15)
Other cities	1.62 (1.41–1.86)	2.13 (1.89–2.40)	2.70 (2.38–3.07)	1.02 (0.89–1.17)
Rural areas	1.40 (1.21–1.62)	2.56 (2.22–2.96)	3.04 (2.58–3.58)	1.30 (1.10–1.53)

Co-occurrence of two unhealthy behaviours was examined by comparing the proportion of those with two unhealthy behaviours to those with only one of them. Since the co-occurrence depends on both the prevalence of the individual unhealthy behaviours and the strength of their association, it is useful to examine sociodemographic variation in the co-occurrence separately in a situation where the sociodemographic gradients of the two behaviours were parallel and in a situation where they varied inversely. To illustrate this, we present co-occurrence of all behaviour pairs by educational level, which features both of these cases (Tab. 4). More often the gradients of the two health behaviours were parallel (see Tab. 1). In such cases it was observed, for example, that a person with a low education who smoked – which he or she was more likely to do than someone with a better education – was also clearly more likely to have an unhealthy diet than the better educated (in other words, the percentage of unhealthy eaters among smokers was large). Poorly educated unhealthy eaters were also more likely to be smokers than their better educated peers. Thus, despite the similarity of the association between smoking and unhealthy diet across all educational levels, a person with a low education who smoked or had an unhealthy diet was also more likely to engage in the other of these unhealthy behaviours than was a better educated one.

In some cases the gradients of the health behaviours were inverse. Smoking was clearly more prevalent in the lowest educational category than in the highest, whereas alcohol consumption showed a positive gradient (Tab. 1). Therefore, in the lowest educational category, the proportion of those smokers who also drank tended to be low, while that of drinkers who also smoked was large (Tab. 4). In other words,

among the less educated the proportion of those who only smoked was much larger than the proportion of those who only drank, and the situation among the better educated was the opposite. Thus, even if the association between the behaviours was similar, the distribution of smoking and drinking as a whole was very different across the educational categories. What was similar was that in all categories smokers more often than non-smokers were drinkers, and drinkers more often than non-drinkers were smokers.

Examining the co-occurrence of unhealthy behaviours in the categories of other sociodemographic characteristics also showed that, even if the associations between health behaviours were relatively similar in all sociodemographic groups, the variation in their co-occurrence was notable.

Discussion

This study presented an analysis of sociodemographic variation in the pairwise associations among four health-related behaviours. Most of the health behaviours examined were interrelated but sociodemographic differences in the associations turned out to be few. Since the prevalence of individual health behaviours and the strength of their association together determine how the behaviours are distributed across sociodemographic groups, we also examined co-occurrence of two unhealthy behaviours. Despite modest variation in the associations, co-occurrence of unhealthy behaviours within the sociodemographic groups proved to be strikingly different.

The data for this study came from a self-administered postal questionnaires. The indicators for the unhealthy behaviours were fairly general. In addition, the influence of each

Table 4 The proportion of those having both two unhealthy behaviours as a percentage (with 95% confidence intervals) of those having at least one of them in each pair of behaviours by educational level

Education	Men			Women		
	0–9 years	10–12years	13+ years	0–9 years	10–12 years	13+ years
% drinkers among smokers	32 (29–34)	38 (35–40)	45 (42–48)	36 (33–40)	41 (38–44)	50 (46–53)
% smokers among drinkers	53 (49–56)	51 (48–54)	34 (32–37)	42 (39–46)	39 (36–42)	26 (24–28)
% inactive among smokers	40 (37–42)	40 (38–43)	33 (30–36)	32 (29–35)	30 (27–33)	31 (28–34)
% smokers among inactive	47 (44–50)	52 (49–55)	34 (31–37)	30 (27–33)	32 (29–35)	22 (19–24)
% unhealthy eaters among smokers	35 (32–37)	25 (23–27)	18 (16–21)	28 (25–31)	26 (23–28)	17 (14–19)
% smokers among unhealthy eaters	41 (38–44)	46 (43–50)	30 (26–34)	23 (20–26)	33 (30–36)	21 (18–24)
% inactive among drinkers	36 (33–40)	33 (31–36)	24 (22–27)	25 (22–29)	25 (22–28)	23 (21–25)
% drinkers among inactive	27 (24–29)	32 (29–35)	32 (29–35)	21 (18–24)	29 (26–32)	31 (28–33)
% unhealthy eaters among drinkers	32 (29–35)	21 (18–23)	13 (11–15)	21 (18–24)	19 (16–21)	12 (11–14)
% drinkers among unhealthy eaters	23 (20–25)	28 (25–31)	28 (24–32)	15 (13–18)	26 (23–29)	30 (27–33)
% unhealthy eaters among inactive	36 (33–39)	27 (24–30)	21 (18–24)	30 (27–33)	26 (23–29)	18 (16–20)
% inactive among unhealthy eaters	38 (35–41)	39 (35–42)	35 (31–39)	28 (25–31)	31 (28–35)	32 (29–36)

sociodemographic characteristic was examined one at a time. Possible interrelationships between these characteristics could not be taken into account. The associations were examined with Mantel-Haenszel odds ratios, which can be used to measure associations between two binary variables. Variables which were not binary needed to be dichotomised. A limitation that follows from this procedure is that information is lost when categories are combined. However, because our variables were not continuous and in some cases the order of the categories was not self-evident, dichotomising was regarded as appropriate. Furthermore, the cut-off points could not be determined merely on the basis of the possible health effects and the current recommendations of engaging in these behaviours. As there has recently been much debate about the healthfulness of moderate alcohol consumption, the cut-off point for alcohol use in particular calls for a comment. Alcohol use was based on the respondents' estimates of the last week's consumption, and the highest quartile was classified as heavy users. Because postal surveys capture only a small proportion of the consumption recorded in the sales statistics (Simpura et al. 1997), the number of weekly drinks among the highest quartile remained low. It is possible that heavier users underestimate their consumption more and are more likely not to respond at all. Nevertheless, it is reasonable to assume that those in the higher end of the scale represent heavier drinkers.

Our study made use of the concept of health-related lifestyle, which refers to health behaviour as a whole. Since only pairwise associations were analysed, our approach used does not fully coincide with the range of the concept. However, examining several pairs of behaviour in parallel is useful since it allows the findings concerning each pair to be

evaluated against all other pairs. Furthermore, examining the associations systematically in all possible pairs of behaviours establishes a general view of their patterning. Our previous study (Laaksonen et al. 2001) showed that pairwise associations rather well describe the patterning of these four behaviours among Finnish men and women. Only the three-behaviour combination of smoking, high alcohol use, and physical inactivity and, among men, the combination of high alcohol use, physical inactivity, and poor diet, could not be reduced back to pairwise associations. Therefore, the present study is likely to quite adequately describe the sociodemographic differences in the associations among these four health behaviours.

The associations between health behaviours found in our study are largely consistent with previous results. As in our study, a strong positive association between smoking and alcohol consumption has been constantly reported (Shiffman & Balabanis 1995; Bien & Burge 1990). Also the associations between smoking and physical inactivity (Wankel & Sefton 1994), smoking and unhealthy diet (Dallongeville et al. 1998) as well as physical inactivity and unhealthy diet (Wankel & Sefton 1994) have been repeatedly observed. While the results are somewhat inconsistent with each other, most previous findings (Wankel & Sefton 1994) are in agreement with our study, which found a positive, though weak, association between alcohol consumption and physical inactivity. Instead, we found an inverse association between alcohol consumption and unhealthy diet, while previous studies have reported alcohol use to be positively associated with some aspects of diet and inversely with others (Hellerstedt et al. 1990). The associations observed in the present study were largely similar for both men and women.

Sociodemographic differences in the associations between health behaviours were quite unexpectedly few. Furthermore, the differences were not consistent according to any of the sociodemographic characteristics. Even when differences were observed, only the strength of the association varied. High alcohol use and physical inactivity were positively associated only among rural women, but none of the health behaviour pairs showed a positive association in one population group and an inverse one in another. Smoking was involved in most pairs that showed sociodemographic differences. Among women, differences were most often observed in the association between smoking and high alcohol use, yet this association was very strong in all subgroups. Three of the pairs (smoking and physical inactivity, high alcohol use and unhealthy diet, and physical inactivity and unhealthy diet) did not show differences according to any of the sociodemographic characteristics for either gender.

Health behaviours are likely to contribute to inequalities found between sociodemographic groups in morbidity and mortality (Stronks et al. 1996; Davey Smith et al. 1994). Examining the co-occurrence of several unhealthy behaviours is crucial since the risk of adverse health effects is likely to increase with the increasing number of unhealthy behaviours (Wingard et al. 1982) and the effect of multiple unhealthy behaviours may be rather synergistic than additive (Luoto et al. 1998; Meng et al. 1999). However, the strength of the association between the behaviours alone does not tell us how widespread the unhealthy behaviours are in different sociodemographic groups: even if the association is strong, unhealthy behaviours do not have to be common. Both the individual unhealthy behaviours and the strength of their association influence on the distribution of the behaviours. Since the associations between health behaviours are relatively similar across sociodemographic groups, these findings suggest that the excess risk posed by multiple unhealthy behaviours in any particular sociodemographic group is primarily determined by the high prevalence of individual unhealthy behaviours and only slightly modified by differences in the strength of their associations.

In this study the proportion of those with two unhealthy behaviours was compared to those with only one of them. Although the associations between health behaviours were similar, co-occurrence of two unhealthy behaviours varied considerably across sociodemographic groups due to the prevalence of individual unhealthy behaviours. A situation where the gradients of the individual health behaviours were parallel and a situation where they varied inversely were evaluated separately. The latter examination can also be taken as indirect evidence against causality of the association between some health behaviours. For example, in pre-

vious research different mechanisms to account for the strong association between smoking and alcohol use have been considered (Shiffman & Balabanis 1995; Bien & Burge 1990). One often discussed possibility is that practising one of these behaviours more or less directly leads to the other. However, if the behaviours were causally related in statistical terms, the prevalence of smoking should increase when that of drinking increases and vice versa. This does not seem to be the case.

The association between smoking and alcohol use was quite similar in all categories of the sociodemographic characteristics. Therefore, indirect selection considering the sociodemographic factors examined, as well as closely related factors, as a possible mechanism behind their association can also be excluded. Some social and psychological factors may not be patterned by these sociodemographic characteristics, however. Psychological explanations have referred to both behaviours as coping strategies whose adoption may be reciprocally reinforcing. Through a cyclic learning process, initial experimentations of one of the behaviours may lead to experimentations in the other, and gradually to a more permanent engagement in these behaviours (Shiffman & Balabanis 1995; Watten 1999). Social and cultural explanations have also considered similar functions of these behaviours. Both of these behaviours may serve similar purposes, such as strengthening group integration or acting as symbols of maturity among adolescents (Franzkowiak 1987; Piispa 1997). However, the functional correspondence of these behaviours must be only partial and such that the behaviours complement each other; was it complete, these behaviours would rather compensate each other and thus occur separately, which in our analysis would have appeared as a weak association.

The question about the nature of the associations between health behaviours has important implications for health promotion policies. Health promotion interventions typically address health behaviours as separate entities. Since health behaviours are not practised independently from each other, interventions that are tailored for specific combinations of behaviours might be more effective. Furthermore, if the associations between health behaviours were causal, changes in one behaviour could be expected to lead to changes in others, and interventions targeting the catalyst behaviour could be recommended. In the light of the results of the present study this latter view seems too ambitious. The temporal order between the behaviours and the causality itself remains open for further scrutiny.

This study adopted a lifestyle approach in examining several pairs of behaviours across the categories of several sociodemographic characteristics. Since a number of behaviours

contribute to the major chronic diseases, and multiple unhealthy behaviours may even produce a greater risk than if the individual risks were simply added up (Luoto et al. 1998; Meng et al. 1999), future research should continue to examine these behaviours together. Yet, the present study showed that co-occurrence of several unhealthy behaviours is primarily determined by the prevalence of individual unhealthy behaviours and only slightly modified by how they are associated. This would support individual unhealthy behaviours rather than their combinations as the primary target for health promotion programmes addressing broad populations.

Zusammenfassung

Zusammenhänge zwischen den die Gesundheit beeinflussenden Verhaltensweisen: soziodemographische Variation in Finnland

Fragestellung: Gegenstand der Untersuchung war die soziodemographische Variation im Zusammenhang und bei gleichzeitigem Auftreten von Gesundheitsverhaltensweisen, die zu chronischen Krankheiten beitragen.

Methoden: Mantel-Haenszel-Odds-Ratios wurden verwendet, um Zusammenhänge zwischen Rauchen, Alkoholkonsum, physischer Aktivität und Diät in den Kategorien mit soziodemographischen Merkmalen paarweise zu untersuchen. Der Breslow-Day-Homogenitätstest wurde benutzt, um soziodemographische Unterschiede zu untersuchen. Ausserdem wurde das gleichzeitige Auftreten von zwei ungesunden Verhaltensweisen in den soziodemographischen Gruppen anhand von Daten untersucht, die bei einer Bevölkerungsuntersuchung an 26 014 finnischen Erwachsenen landesweit erhoben wurden.

Ergebnisse: Die meisten überprüften Gesundheitsverhaltensweisen standen in einem Zusammenhang miteinander, aber die Zusammenhänge zeigten nur wenige soziodemographische Unterschiede auf. Die Unterschiede waren für alle soziodemographischen Merkmale inkonsistent. Unterschiede wurden nur in der Intensität der Zusammenhänge, nicht in ihrer Richtung festgestellt. Aufgrund der ungleichmässigen Verteilung der individuellen Verhaltensweisen variierte ein gleichzeitiges Auftreten von ungesunden Verhaltensweisen jedoch stark innerhalb der soziodemographischen Gruppen.

Schlussfolgerungen: Die Zusammenhänge zwischen den gesundheitlichen Verhaltensweisen innerhalb der soziodemographischen Gruppen waren verhältnismässig gleich. Da gleichzeitiges Auftreten von ungesunden Verhaltensweisen vom Auftreten von individuellen ungesunden Verhaltensweisen und von der Intensität ihrer Zusammenhänge abhängt, wurde ihr gleichzeitiges Auftreten in einer speziellen soziodemographischen Gruppe hauptsächlich beim Auftreten von individuellen ungesunden Verhaltensweisen festgestellt.

Résumé

Associations entre comportements liés à la santé: variations socio-démographiques en Finlande

Objectifs: L'étude porte sur la variation socio-démographique des associations et co-occurrences des comportements liés à la santé contribuant à des maladies chroniques multifactorielles.

Méthodes: L'odds-ratio de Mantel-Haenszel a été utilisé pour examiner par paires des associations entre le tabagisme, la consommation d'alcool, l'activité physique et les régimes alimentaires dans plusieurs catégories socio-démographiques. Le test d'homogénéité de Breslow-Day a été utilisé pour les différences socio-démographiques. En outre, la co-occurrence de deux comportements nuisibles à la santé a été examinée par catégorie socio-démographique en utilisant des données concernant 26 014 adultes finlandais.

Résultats: La plupart des comportements examinés étaient interconnectés et les différences socio-démographiques peu nombreuses. Les différences n'étaient pas en relation directe avec les caractéristiques socio-démographiques. Des variations ont été observées dans l'intensité des associations mais non dans leur direction. Cependant, en raison de la distribution inégale des comportements individuels, la co-occurrence des comportements nuisibles à la santé variait fortement entre les groupes socio-démographiques.

Conclusions: La co-occurrence des comportements nuisibles à la santé dans tous les groupes socio-démographiques était principalement déterminée par la prédominance des comportements individuels.

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