IMPROVEMENT IN MENTAL HEALTH?

DEPRESSION AND INSOMNIA, WITH SPECIAL EMPHASIS ON THE DARK TIME, IN FINNMARK COUNTY 1987-1996

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ABSTRACT.

The object of this study was to describe changes in mental health problemes, relating to the dark time, in a general population living in Norways northernmost county Finnmark. Depression and insomnia, both generally and related to the dark period, were measured at two different time points as part of two general health surveys. The surveys were done in 1987/88 (Finnmark III) and 1996/97 (Finnmark VI). The population participating in the surveys were partly the same and partly new individuals, which gave opportunity to look at the data both as repeated cross-sectional and as prospective studies. The attendants answered questiones about depression and insomnia, and if so what time of the year they were troubled. Between 12,859 and 15,526 people answered questions in Finnmark III and 7,397 people answered questions in Finnmark VI. In the cohort that answered there were 3318 and 3682 people that answered questions relating to insomnia and depression at both times.
The total prevalence of depression and insomnia both generally and related to dark time had decreased. All changes were found to be significant. The decrease was also true for the cohort when looking at general insomnia and depression in general as well as related to dark time. Insomnia related to dark time was the only problem where the prevalence had increased, but the finding was not statisticly significant. When comparing age groups in the cohort we found the same changes as for the total population. The decrease in insomnia related to dark time was, however, not significant for all age groups.

We conclude that self reported mental health in Finnmark has improved between 1987 and 1997. This finding is discussed in relation to changes in the society and peoples living condition.

INTRODUCTION

Season has been thought to affect people's mental state for years and was included in many of the ancient theories about etiology of disease. Description of this connection goes all the way back to Hippocrates [1] who taught that "it is chiefly the changes of the seasons which produce diseases, and in the seasons the great changes from cold or heat" Ancient physicians believed that the pattern of affective illness was produced by seasonal changes in temperature acting on body humours. In psychiatry, no specific disorder was defined as being connected to season, however, until Rosenthal et al described a condition they called Seasonal Affective Disorder (SAD), in 1984 [2]. SAD was defined as a condition with regularly recurring depression in autumn or winter with a remission the following spring or summer. Rosenthal et al proposed a set of diagnostic criteria and described favorable response to treatment with bright light.

After SAD was described there has been intense discussion about the concept. If there really is such a disorder, how many people are suffering from it, and what are the causes of the disorder? The main hypothesis from the start was lack of light in winter caused the disorder. Light changes with latitude of living, and there have been several studies at different latitudes. The findings from these studies are inconsistent, and in a review paper, Mersch et al concludes that "if latitude influence prevalence, this influence is only weak" [3].

Subsequently, various other hypotheses have been put forward: change in acclimatization or genetics. [4]

Even though the validity of the concept of SAD has been questioned, there is no doubt that people in northern Norway have complaints and discomfort related to the so-called " dark

period". This is a period in winter were the sun does not rise above the horizon at all. The length of the period is dependent upon latitude, but the duration is about two months, from November to January. The most usual complaint is the so-called "mid-winter insomnia". This is a condition of sleeplessness, where the individual do not get sleepy in the evening and therefore tend to bed later and later, with the consequence of being more and more tired in the morning. This condition was described by Devold already in 1957 [5]. Lingjærde and co-workers performed several treatment studies of mid-winter insomnia in the early 80-ties [6-8]. The first large-scale study of sleeping-problems in northern Norway came in 1980 [9]. The main findings were that mid-winter insomnia had a prevalence of 18 % in women and 9 % in men. The etiology of midwinter insomnia is not known. It has been hypothesized that it is an expression of a phase delay of the sleep-wake rhythm, caused by a lack of the entraining effect of daylight upon biological rhythms, especially upon the secretion of melatonin [10]. Mid-winter insomnia tends to start with the beginning of "the dark period" and get quickly better at the end of it. Other complaints in the dark period are depression and fatigue. These complaints are less common than insomnia. The prevalence of depression related to the dark period have been found to be 11 % in women and 5 % in men, and that of fatigue to be about 2% in both genders [11]. If mid-winter insomnia and depression in winter really are caused by lack of daylight, one should expect the population prevalence to be rather stable over time at the same latitude of living. However, no study of depression related to the dark period have measured the same population more than at one time-point.

Finnmark is the northernmost county of Norway. The county stretches from 68^0 N to 71^0 N, it covers 48,637 square kilometers and is the home of 73,732 people. The population here lives under some of the most extreme variations in daylight found anywhere in the world. The dark period last from the end of November to the end of January, and during summer the sun does

not disappear for the same amount of time. Despite the northern location, the population living here is Caucasian, whereas in other parts of the world at the same latitudes there are mostly indigenous people. As for climatic conditions, the mean temperature in winter and summer is not very different from that of the Norwegian capital Oslo, 1,800 kilometers further south, at 60^0 N. The main difference is that the winter season is longer than in Oslo. The mean temperature in Finnmark is approximately 5 degrees Celsius below zero in January, and 10 degrees Celsius above zero in July. This is owing to the warm Gulf stream coming from the Caribbean and going along the Norwegian coastline.

Summing up, the conditions of living in Finnmark, except for the extreme variations in light, is comparable with most other places in Scandinavia. This makes Finnmark a good place to study how health is affected by changes in amount of daylight. Large surveys of general health done here both in 1987 and 1996 have given material that gives us the opportunity to look at change over time, both in depression and insomnia in general, and related to the dark period.

MATERIALS AND METHODS

Design

In the years 1974-1997 there has been six general health surveys in the northernmost part of Norway, - Finnmark county (numbered Finnmark I-VI). The six surveys have had slightly different focus. The first two were mainly preoccupied with heart disease, but since the third one there has also been questions relating to life style, musculo-skeletal symptoms and mental health. The Norwegian National Health Screening Service and Institute of Community Medicine at the University of Tromsø did the surveys. The population participating in the surveys is partly the same individuals and partly new ones. One is able to identify the people

who have participated more than once, so one can follow an individual throughout the surveys. This means that the data collected can be analyzed both as repeated cross-sectional studies and as a prospective study.

All the studies have followed the same general pattern. A sample of the population was invited to attend. The invitation also included a questionnaire to be answered. On the day of the survey the attendants had a general health check with blood-tests and got another questionnaire. In some of the surveys all of the invited also received a third questionnaire after the survey. The Finnmark III survey is described in detail elsewhere [12;13]. Finnmark III (FIII) and VI (FVI) include the largest number of individuals and are the two surveys with most questions related to mental health with specific emphasis on depression and insomnia. We have selected these two surveys to look at mental health problems relating to the dark time.

Population

Finnmark III: The survey took place in 1987/88. All persons aged 40-62 and a selection of those aged between 20-39 were invited, totally 23,011 people. The eligible population is 21,178 because 1,833 people had moved or died. Questionnaire number one was on the back of the invitation. On the day of the survey, questionnaire number 2 was given out to those who attended (17,866 people) and returned by 12,859 people (71.8 percent of eligible). A questionnaire number 3 was sent to everybody that had been invited 4-8 weeks after the survey and returned by 15,526 people (73.3 percent of eligible). The questions regarding insomnia were on questionnaire no 2, whereas the questions regarding general depression and use of medication were on questionnaire no 3.

Finnmark VI: The survey took place in 1996/97. All persons aged 40-42, all aged 43-71 in 8 municipalities and all 69-71 year olds in the county, totally 12,299 people, were invited. Most probably like in FIII, some of the invited had moved or died. We do not know the exact number in this group. Questionnaire number 1 was on the back of the invitation and completed by 7,925 people (64.4 percent). Those invited also got a questionnaire number 2 in the mail before the survey, this was completed by 7,397 people (60.1 percent of invited). All of the questions regarding mental health were on questionnaire no 2.

A total number of 7,989 people were invited to both of the surveys. Because the questions on mental health are placed on different questionnaires the number of people that have answered key questions on mental health in both survey varies, depending on which question you look at. 3,318 people (41.5 percent of those invited to both surveys) have answered the questions about sleeping problems at both times whereas 3,682 people (46.0 percent of those invited to both surveys) have answered questions about depression at both times. The questions asked in the two surveys are almost identical, and were answered at the same time of the year in the two surveys.

The number of invited persons, the response rates and the characteristics of the responding population are described in Table 1. As can be seen, the population that was invited to both surveys and filled in the questionnaires at both time-points, consisted of slightly more females and married persons. They probably represents the most stable part of the population.

Variables

All attendants completed questionnaires with questions about marital status, place of residence, ethnic background, education and occupation. Also questions about general health, use of medications, eating habits, mental health and social network were included.

Depression: People were asked if they were depressed for a period of at least 14 days (yes/no). If answer was yes, they were asked at what time of the year this was a problem. There were four alternative answers: no special time, during the dark period, during the midnight sun period or spring and fall.

Insomnia: People were asked if they sometimes were troubled by insomnia/sleeping problems (yes/no). If yes, they were asked at what time of the year this was a problem. There were four alternative answers: no special time, during the dark period, during the midnight sun period or spring and fall.

Analyses

The data were analyzed using SPSS (version 10.0 for Windows) using descriptive statistics (frequencies and crosstables). The data from the FIII and FVI surveys were analyzed both as two separately cross-sectional studies and as a prospective study on the cohort that participated in both studies.

RESULTS

Changes in total prevalence of self-reported mental distress from 1987 to 1996.

Data were analyzed as repeated cross-sectional studies, results are presented in figure 1. As can be seen, the total prevalence of depression and insomnia as well as depression and

insomnia related to the dark time has decreased from FIII to FVI. The difference in prevalence is highly significant, both for general depression (Chi-square 222.73, df=1, p< 0.000), depression related to dark time (Chi-square 134.37, df=1, p<0.000), general insomnia (Chi-square 271.4, df=1, p<0.000) and insomnia related to dark time (Chi-square 18.71, df =1 p<0.000).

Are the reported changes due to differences in the two populations studied?

As figure 1 represents different persons with slightly different characteristics at the two time points (slightly more women, higher mean age and higher percentage of married persons), we can not exclude that the changes in prevalence are due to confounding. In order to exclude this possibility, the cohort of persons that have answered both surveys was analyzed. Stratified analyses for both sexes and age groups were done. Due to very low number of individuals under thirty and over seventy years of age invited to both surveys, these were excluded from the subsequent analyses. Results are presented in table 2 for depression and table 3 for insomnia.

Prevalence of general depression and depression related to the dark time have decreased from 1987/88 to 1996/97 for both men and women in all age groups in the cohort. Women report equal or more depression and depression related to the dark time than men in all age groups at both times. The differences in prevalence for both general depression and depression related to dark time are significant in all age groups except for depression related to dark time for men and women between 30-39.

Prevalence of general insomnia has decreased for both men and women in all age groups in the cohort. Women report more insomnia than men in all age groups at both times. However

the only variable increasing with time is insomnia related to dark time. Prevalence of this variable has increased for both men and women. This is true for all age groups except women between sixty and sixty-nine. The changes in prevalence between Finnmark III and Finnmark VI are significant for general insomnia but not for insomnia related to dark time.

Are the changes related to increasing age in the individual or changes in the society from 1987/88 to 1996/97?

Those persons who had answered the key questions in both surveys, had both experienced the effect of aging, as well as possible changes in the society during the time-span of the 9 years between the surveys. In order to differentiate between these two effects, persons in the different age groups in FIII were compared to persons in the identical age group in FVI. Analyses were done separately for both sexes. (Males aged 40-49 in 1987/88 were compared to males aged 40-49 in 1996/97 and so on). Results are presented in table 4 and 5 for depression and insomnia respectively.

The prevalence of depression and depression related to the dark time has decreased from FIII to FVI for both men and women in all age groups. This is also true for the prevalence of insomnia and insomnia related to dark time. The decrease relating to depression, depression related to dark time and general insomnia is significant. For insomnia related to dark time the change is significant for all groups except for men aged 30-39 and 60-69 and women with age below 40.

DISCUSSION

The total prevalence of depression and insomnia as well as depression and insomnia related to the dark time has decreased in Finnmark from 1987 to 1996. The decrease in prevalence is

true for both sexes and all age groups. In the cohort attending at both times prevalence of general depression and insomnia and depression related to the dark time has decreased among men and women in all age groups, whereas insomnia related to the dark time has increased. All changes in general depression are statistically significant. The changes in depression related to dark time are significant except in the youngest age group and among women aged 50-59. The decrease in general insomnia is significant for all groups whereas the changes in insomnia related to dark time is only significant for men aged 40-59 and women aged 40-49 and 60-69.

The invited population to both studies included very few young people and people over seventy. These individuals also had a low response rate and were excluded from all the analyses except Table 1 and Figure 1. We can not tell if the changes in prevalence of depression and insomnia in these age groups have the same pattern as in the other age groups.

There may be some selection bias in the data. The sample that are analyzed represent the stable part of the population, with a higher percentage of women, middle aged and married people. It is impossible to know exactly how the non-responders would have affected the pattern of change. In general, non-responders have higher prevalence of severe mental disease [14]. Such disorders are probably more stable over time than the milder forms of mental distress which we have studied. In general, among non-responders only a relatively small fraction of people have severe mental disorders. Thus, the inclusion of these persons would probably not alter our main conclusions. Due to the stability of their problems, inclusion of those with more severe mental disorders may however have reduced the magnitude of changes reported. On the other hand, as the most severe ill persons are not included, the

chances of detecting real changes in the less affected majority of the population become higher.

The FIII and FVI surveys were general health surveys. The questions cover many areas of health, which means that there is not room for detailed questions on each topic. Mental distress was measured by few variables and one can ask if this is enough to identify the problems. This question has been addressed by Jacobsen et al [15] who concluded that even short versions of the GHQ questionnaire could be used to measure the degree of mental distress in population surveys.

People are asked about past events. As in all retrospective studies memory distortion is a problem. This is however a problem at both time-points and therefore can probably not explain the changes seen.

The data do not represent the prevalence of SAD in the population, but the prevalence of mental distress and mental distress during the dark time. Because of this, the data can not be directly compared to other studies that have aimed to find the prevalence of SAD. Most of them have used SPAQ [16] to measure SAD. It is however likely that the people that answer yes to the questions on mental distress related to season in FIII and FVI would meet the SAD criteria after using SPAQ. [17]

Our study has several strengths: The majority of the population participating in the FIII and FVI is Caucasian. In addition, there is a small minority of people with lappish and Finnish ethnicity. Elsewhere in the world the population living at such latitude is mainly indigenous people. Also the population sample studied is large with exception of people aged 30-39 in

FVI. And most other studies are cross-sectional, which does not allow for analyses of changes over time.

The pattern of changes reported is the same and consistent for gender and age for both the two separate survey populations and the cohort participating at both times. On these grounds we think it is reason to believe that the results reported here represents true changes in the population. We will then move on to discuss our findings in relation to earlier international research.

Depression in general

Regarding changes in population prevalence of depression over time, results from different studies internationally are conflicting. Evidence from cross-sectional studies asking people to recall past episodes of depression [18-20] suggest that the rates of depression have been increasing since the 1950ties. Only a few prospective population studies exist. In the Lundby study from Sweden [21], increase both in prevalence and incidence of depression was found, especially among young men. In the Midtown Manhatten study [22], however, rates of depression was found to be higher in men and lower in women in 1974 compared to 1954. In the Stirling County study [23], prevalence of current depression was found to be remarkably stable, measured in 1952, 1970 and 1992. In a study from the costal part of Finnmark [24], rates of current depression were found to be decreasing in both genders, from 1987 to 1990 and 1993.

Why has prevalence of depression decreased in Finnmark? One knows that in the 90-ties, doctors prescribed more antidepressants, and more antidepressants were sold, than in the 80-ties [24]. In the period 1993-1996 the number of defined daily doses of antidepressants was

doubled in Finnmark. Could it be that prevalence of depression has decreased because depression to a greater degree has been treated than before? In the questionnaires, there were questions about current depression and about use of antidepressants. It is possible that some of the people taking medicine for depression felt better and therefore reported not being depressed. We looked at the possibility of this being the explanation for the decrease in depression. We reclassified the people that reported not being depressed but used antidepressants as depressed. The total prevalence of depression then became 20,3 % in Finnmark III and 12,3 % in Finnmark VI. The prevalence in the cohort measured at both time-points decreased from 17,6 percent to 10,6 percent. Thus, the prevalence of depression, corrected for the use of antidepressants, showed the same decrease as in the original analyses.

It could also be that something has happened in Finnmark over these years, changing the conditions of living for the population so that they do not feel that much depressed anymore. Mental distress is closely connected to socio-economic status [25] and unemployment [26]. There are reasons to believe that these factors have improved in Finnmark from 1987 to 1996. The economy of Finnmark county is to a large degree based upon the fisheries. From the mid 80-ties a big crisis developed in this area, with many bankruptcies and high levels of unemployment. This crisis reached its maximum in 1990, and since then unemployment has gone down. Regarding socio-economic status, length of education is considered to be a robust and sensitive indicator [27]. The percentage of people with 15 years education or more increased in the population of this study, from 8,5 percent in Finnmark III to 18.6 percent in Finnmark VI, indicating a substantial improvement of socio-economic status in the population.

Insomnia in general

We performed searches in the database MEDLINE and PubMed for publications on changes in sleeping-problems in general populations, but could not find any prospective studies in unselected samples dealing with this. In contrast to antidepressants, the use of hypnotics has gone down in Finnmark in the period from 1987 to 1996 [24]. People report less general insomnia despite of this fact. Insomnia is known to be an indicator of depression. Could it be that insomnia has decreased because of the fact that people are less depressed? The prevalence of insomnia decreased both in the group that reported to be depressed, and those who did not (data not shown), but the data can not fully entangle these intricate connections.

Mental distress connected to the dark period

People in Finnmark report less depression and insomnia connected to the dark period in 1996 than in 1987. We have not been able to find any other prospective study of mental distress during winter. The concept of SAD was formulated in 1984, and has since then been widely discussed and become public knowledge, also in Finnmark. In theory, this should tend to have the effect of increasing the prevalence of distress connected to the dark period. People that before did not think of their problems in the dark period as depression, should to a greater degree do so when the medical establishment starts to tell them that such a "disease" exist. This effect is called "medicalisation" of ordinary life problems, a widely discussed problem in later years [28]. It seems that the population of Finnmark has not succumbed to this medicalisation. It could also be that the improvement in the conditions of living has been so great that it overshadows the possible effect of medicalisation.

It is probable that there is a selective migration from Finnmark. People that have great problems during the dark time will to a certain degree move, leaving behind those who can

tolerate the dark period better. There are, however, several reasons why this is not a likely explanation for our findings. In the first place, such selective migration should tend to have a stable magnitude, and therefore not cause a change in prevalence of depression from one time-point to another. Furthermore, the decrease in prevalence was evident also in the cohort studied at both time points. And finally, in a study by Hansen et al [11], there were no differences in prevalence of depression according to years spent in Finnmark

If better condition of living is the main explanation of the decrease in prevalence of general depression and insomnia, and depression connected to the dark period, why has there been an increase, albeit not significant, in insomnia related to the dark period in the cohort studied at both time-points? One explanation could be that insomnia related to the dark period is the most biologically determined phenomenon of the four variables we have studied, and consequently the phenomenon least prone to be influenced by changes in conditions of living.

As mentioned in the introduction, results from cross-sectional studies at different latitudes in the world have yielded conflicting results as to the hypothesized connection between SAD and amount of daylight. In our view, the present results serves to invalidate this hypothesis further. If amount of daylight was the main determinant of depression in winter, the prevalence should be rather stable in the same population over time. Regarding explanations for the improvement in general depression and insomnia over time, however, our proposed explanations need further research to be substantiated.

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Fig.1. Total prevalence of depression and insomnia in Finnmark III (F III) 1987/88 and Finnmark VI (F VI) 1996/97

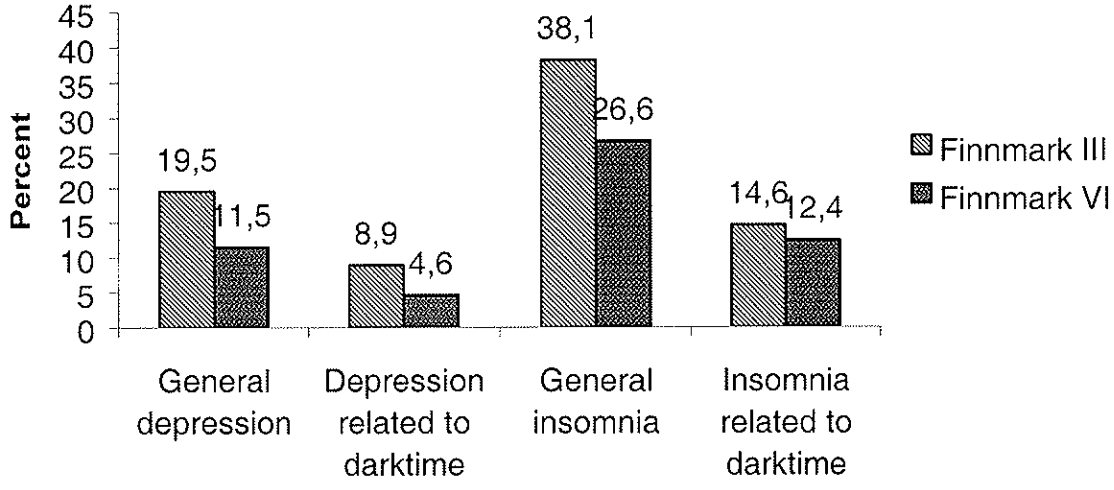

TABLE 1. Demographic characteristics of the general population invited to the Finnmark studies Finnmark III (FIII) in 1987/88 and Finnmark VI (FVI) in 1996/97

	FIII			FVI			FIII and FVI		
	Invited	Answered questionnaire no 2	Answered questionnaires no 3	Invited	Answered questionnaire no 1	Answered questionnaire no 2	Invited to both surveys	Answered key questions about depression	Answered key questions about insomnia
Number of people	23011	12859	15526	12299	7925	7397	7989	3682	3318
Percent of eligible (FIII) /invited (FVI)		71.8	73.3		64.4	60.1		46.0	41.5
Men	12324	6509	8017	6469	3851	3692	4177	1854	1616
Women	10687	6350	7509	5830	4074	3705	3812	1825	1700
Men:Women ratio	1.15	1.03	1.07	1.11	0.95	1.00	1.10	1.02	0.95
Percent married	64.6	71.2	68.6	56.2	62.2	64.5	68.0†	73.9†	75.5†
Age mean	46.5	47.5	46.6	52.3	52.3	51.7	47.7†	47.6†	47.9†
Age SD	9.9	9.3	9.8	10.9	10.9	10.7	10.0	9.8	9.5

† For the population invited to both surveys, values for Finnmark III are given

TABLE 2. Prevalence of general depression and depression during the dark time in persons attending both Finnmark III (FIII) 1987/88 and Finnmark VI (FVI) in 1996/97

Gender and age group†	No	General depression (%)			Depression related to dark time (%)		
		FIII	FVI	p-value*	FIII	FVI	p-value*
Men							
30-39	388	15.5	10.3	0.024	6.2	3.6	0,11
40-49	635	14.2	7.7	<0.000	6.3	2.7	0.002
50-59	468	15.2	9.4	0.002	7.7	4.1	0.006
60-69	351	12.0	6.0	0.005	7.7	2.8	0.003
Total	1842	14.3	8.4		6.9	3.3	
Women							
30-39	441	19.5	14.3	0.022	6.6	5.0	0.337
40-49	563	20.2	11.7	<0.000	9.1	4.8	0.003
50-59	452	16.8	10.8	0.004	7.7	4.2	0.020
60-69	348	19.0	10.6	<0.000	9.8	4.0	0.002
Total	1804	19.0	11.9		8.3	4.5	

*Chi-Square, McNemars Test

†Age group is age group at the time of FIII

TABLE 3. Prevalence of general insomnia and insomnia during the dark time in persons attending both Finnmark III (FIII) 1987/88 and Finnmark VI (FVI) in 1996/97

Gender and age group†	No	General insomnia (%)			Insomnia related to dark time (%)		
		FIII	FVI	p-value*	FIII	FVI	p-value*
Men							
30-39	310	26.8	18.1	0.002	6.8	8.1	0.61
40-49	582	24.6	18.0	0.001	5.8	7.2	0.33
50-59	411	22.9	18.5	0.057	8.5	10.5	0.32
60-69	306	31.0	24.8	0.034	14.4	16.3	0.47
Total	1609	25.8	19.5		8.3	9.9	
Women							
30-39	380	35.8	27.6	0.004	13.4	14.2	0.81
40-49	541	38.6	32.7	0.010	13.3	16.1	0.12
50-59	452	53.5	40.7	0.000	18.6	21.9	0.18
60-69	313	58.5	40.6	0.000	27.5	22.0	0.07
Total	1686	45.7	35.2		17.4	18.3	

*Chi- Square, MacNemars Test

† Age group is age group at the time of FIII

TABLE 4. Prevalence of general depression and depression during the dark time in Finnmark III (FIII) 1987/88 and Finnmark VI (FVI) in 1996/97

Gender and age group	No		General depression (%)			Depression related to dark time (%)		
	FIII	FVI	FIII	FVI	p-value*	FIII	FVI	p-value*
Men								
30-39	1199	96	17.2	3.1	<0.000	6.6	1.0	0.03
40-49	3145	1659	15.9	9.6	<0.000	7.0	3.0	<0.000
50-59	2367	844	18.1	8.4	<0.000	9.1	3.3	<0.000
60-69	736	717	14.8	8.1	<0.000	7.6	3.5	0.001
Total	7447	3316	16.7	8.8		7.7	3.1	
Women								
30-39	1132	125	23.8	7.2	<0.000	10.5	3.2	0.009
40-49	2750	1763	22.2	15.6	<0.000	9.6	6.4	<0.000
50-59	2276	756	22.0	14.0	<0.000	10.9	6.0	<0.000
60-69	704	685	25.0	13.9	<0.000	13.8	5.8	<0.000
Total	6862	3329	22.7	14.6		10.6	6.0	

* Chi-Square

TABLE 5. Prevalence of general insomnia and insomnia related to dark time in Finnmark III (FIII) 1987/88 and Finnmark VI (FVI) 1996/97

Gender and age group	No		General insomnia (%)			Insomnia related to dark time (%)		
	FIII	FVI	FIII	FVI	p-value*	FIII	FVI	p-value*
Men								
30-39	851	95	26.9	12.6	0.002	7.1	4.2	0.30
40-49	2486	1667	29.5	21.1	<0.000	10.6	7.4	<0.000
50-59	1938	848	32.8	20.6	<0.000	12.6	9.3	0.012
60-69	636	732	30.7	20.4	<0.000	12.3	11.1	0.49
Total	5911	3342	30.3	20.6		10.9	8.6	
Women								
30-39	915	124	34.5	21.8	0.001	13.8	9.7	0.21
40-49	2299	1754	42.4	28.5	<0.000	17.0	12.8	<0.000
50-59	1916	765	53.0	34.9	<0.000	20.7	16.5	0.013
60-69	611	731	60.1	38.0	<0.000	27.7	20.4	0.002
Total	5741	3374	46.6	31.8		18.8	15.1	

* Chi -Square