

Paper I

The Influence of Mental Health, Psychosocial Factors, and Educational Skills on the Educational Aspirations of Indigenous Sámi and Non-Indigenous Adolescents in the Arctic

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Abstract

Background: Mental health and psychosocial factors seem to influence the educational aspirations of adolescents, which are also known to be related to educational skills and sociodemographic factors such as gender, ethnicity, religious affiliation, and socioeconomic status. Previously, the relationship between educational aspirations and mental health, psychosocial factors, and educational and sociocultural conditions has not been investigated in Arctic adolescents.

Objective: We aimed to investigate the influence of mental health, psychosocial factors, and educational skills on educational aspirations among multiethnic adolescents in an Arctic sociocultural context.

Method: The Norwegian Arctic Adolescent Health Study, which was conducted from 2003 to 2005, is a cross-sectional school-based survey. Individuals from the total population of 5877 tenth graders between the ages of 15 and 16 years were invited to participate in the study. Of this group, 4881 participated (response rate, 83%), 50.1% were female, and 10% were indigenous Sámi.

Results: Educational skills as measured by higher average mark were associated with higher aspirations; lower average mark was associated with lower aspirations. Weaker peer support and stronger parental involvement influenced aspirations in individuals with both higher and lower aspirations. Adolescents with lower rates of hyperactivity and inattention problems reported higher aspirations, whereas adolescents with emotional problems showed a greater inclination toward intermediate aspirations. In addition, males and Sámi adolescents showed lower aspirations and were more likely to be located in more remote and northern areas.

Conclusions: This study confirmed earlier findings that educational skills have a strong influence on educational aspirations. However, mental health as well as social, familial, and residential contexts must be addressed to foster adolescents' educational aspirations. Negative peer support for master's and vocational degrees should be addressed by families and schools. Gender, ethnicity, and religious affiliation had limited effects on the educational aspirations of the students in this study.

Keywords: Educational aspirations; adolescence; mental health; Sámi; indigenous; religion

Introduction

Employment is a key factor that underlies well-being (1,2), and living conditions as determined by socioeconomic status, health, independence, and social inclusion are related to employment and income (3). Moreover, adolescents' educational aspirations predict their educational and vocational attainment in adulthood (4) and thereby their opportunities for employment and good living

conditions (5). Despite the obvious connection between educational aspirations and subsequent education and employment, many youths have no clear aspirations, or they may be indecisive with regard to their aspirations. Educational aspirations are shown to be strengthened by support from family and friends as well as by other psychosocial factors (6-8), and they are influenced by good mental health and educational skills (7-11).

Educational skills as measured by average mark and student self-reports of their mastery of their schoolwork have been shown to have substantial effects on educational aspirations in some studies (10,12). Parents' or caretakers' socioeconomic status (SES) has also been found to strongly affect children's educational aspirations (13-17). Indeed, Garg and colleagues (4) suggested that family background predicts educational aspirations with respect to academic self-concept in that highly educated parents can serve as role models for their children.

Mental health has been found to influence educational aspirations and educational attainment in several ways (7,8,10). For example, studies have revealed that externalizing symptoms are related to poorer educational aspirations (9). Adolescents who have been diagnosed with attention-deficit/hyperactivity disorder are more likely to drop out of high school, whereas the mental health of depressed adolescents does not appear to influence their likelihood of completing high school (9). Breslau and colleagues explained high school dropout rates by citing attention problems associated with attention-deficit/hyperactivity disorder and learning disabilities (9). Females typically complete school despite experiencing internalized symptoms such as emotional and peer problems (9,11). Furthermore, health risk behaviors such as substance use are strongly associated with the failure to complete high school on time (9,11). Nevertheless, little is known about how mental health problems other than externalizing problems are associated with educational aspirations.

Educational aspirations among adolescents in Arctic Norway are found to differ between and within ethnic groups (18). Rates of higher education at the university and university college levels tend to be more than 10% lower in Arctic Norway than in other parts of Norway (19); the number of high school dropouts is also a serious concern (20,21), because Arctic areas have higher dropout rates than other areas (22). International studies have noted how females' educational aspirations have evolved. In contrast to nowadays, and only a few decades ago, females had significantly lower educational aspirations than males (23). This trend can be observed in the indigenous Sámi population, which includes a high number of well-educated indigenous Sámi females, as is seen in the majority population (24,25). Historically, females in minority populations tend to have low educational aspirations (23), but revitalization among indigenous groups has positively influenced females in this context (24,25).

The Arctic part of Norway is a sparsely populated and multiethnic area with a majority Norwegian and minority Sámi and Kven populations. The Kvens

have the status as a national minority, and are descendants of Finnish immigrants from the 1700 and 1800s. The Kvens are strongly assimilated into Norwegian culture today. By contrast, the approximately 100,000 indigenous Sámi live in the Arctic area of Scandinavia and the Russian Peninsula, where they have their own culture and language. Most Sámi live in the rural and semi-rural areas in Norway. The historical trauma, forced assimilation, and colonization endured by the indigenous Sámi populations—which included boarding schools and forced language shifts in schools and public areas—led to a loss of culture and ongoing oppression and discrimination (26,27). The assimilation process may have influenced the Sámi family system's view of higher education, with negative experiences associated with the school systems and forced language shifts. However, within the last few decades, a strong revitalization of culture and a higher standard of living have emerged among the Sámi, thereby decreasing the social gap between the majority and minority populations and increasing the Sámi population's level of cultural pride (28,29).

Laestadianism, which has been a substantial religious movement since the early 1800s, was initially strong among the Sámi in Norway, Sweden, and Finland. Today, however, it has crossed ethnic boundaries. Laestadianism has traditionally been considered a Sámi version of Lutheran Christianity, and it holds a strong religious and social position that involves conservatism and abstinence of many forms (30-32). The Laestadians still represent an essential social and cultural network in the Arctic area.

In recent decades, several studies have shown that the mental health of Sámi youths is as good as that of non-Sámi youths (27;33-36). Sámi youths report less substance abuse than their non-indigenous peers (27,32;34-36), perhaps because of the influence of Laestadianism on Sámi adolescents and the norm of abstinence among their families. No previous studies have explored whether this type of religious group membership or Sámi ethnicity is associated with educational aspirations among Arctic Norwegian adolescents.

Blocked opportunity theory, oppositional identity, and status attainment are key concepts for understanding the educational aspirations of minority youths (23). The term *blocked opportunity* refers to a lack of social mobility and a self-fulfilling prophecy of maintaining one's social class and SES (23). *Oppositional identity* can be understood as a minority group's rejection of a majority group's rational choices based on their values and beliefs (37,38). Sámi males are more involved in traditional Sámi occupations such as reindeer herding, and, as Laestadians, they tend to uphold the traditional conservative male role. Males may perceive their

educational outcomes as blocked opportunities if they maintain their traditional ethnic and Christian values. *Status attainment* results from social mobility, which is facilitated by national student loans for living expenses and tuition-free higher education, which is available to everyone in Norway (25,39). Therefore, from the perspective of oppositional identity theory, one can observe a coping strategy in which males reject the values and norms of the majority, whereas females are more receptive to social attainment.

This study aims to investigate the influence of mental health, psychosocial factors, and educational skills on educational aspirations among indigenous and non-indigenous adolescents in an Arctic sociocultural context. We expect that lower SES, male gender, Sámi ethnicity, and Laestadian affiliation will have a negative effect on educational aspirations, whereas good educational skills as well as good peer, class, and teacher relationships will positively influence educational aspirations. We also hypothesize that mental health problems such as hyperactivity, attention, and conduct problems will be associated with indecisiveness, whereas emotional problems will not be related to educational aspirations.

Methods

Sample and Procedure

The Norwegian Arctic Adolescent Health Study was conducted from January 2003 until January 2005. All tenth-grade students in all junior high schools in the three northernmost Norwegian counties were invited to participate in this study. The participants included 4881 of 5877 total adolescents who were seniors in junior high school (i.e., tenth graders) and who were either 15 or 16 years old. The following response rates were observed for the total sample and for the populations of the three counties: total, 83%; Finnmark, 71%; Troms, 82%; and Nordland, 88%. The participating sample consisted of the total population of tenth graders that was present at school when the survey was conducted.

The questionnaires were administered during a 2-hour period in a classroom setting that was monitored by project staff; non-attending students completed their questionnaires at a later time. The questionnaire was available in both the Sámi and Norwegian languages.

Of the respondents included in the sample, 50.1% were female and 49.9% were male. Approximately 10% were indigenous Sámi. In all, 6% reported having a Laestadian affiliation in a three-generational perspective; specifically, 8% of the males and 5% of the females considered themselves to have Laestadian affiliation. In addition, more Sámi adolescents reported having a Laestadian affiliation

and a primary industry background (e.g., reindeer herding). A total of 93 (20.7%) of the Sámi adolescents reported having a Laestadian affiliation.

Measures

Educational aspiration was measured with the question "What is the highest educational level you plan to complete?" The following response options were available:

- 1) "A high-level university or college education" (e.g., lecturer, solicitor, civil engineer, dentist, doctor, psychologist, civil economist);
- 2) "A mid-level university or college education" (i.e., a Norwegian university degree that takes 3.5 to 4.5 years to complete; e.g., teacher, social worker, nurse, police officer, engineer, journalist);
- 3) "A high school diploma";
- 4) "Vocational education at a high school level" (e.g., chef, hairdresser, builder, electrician, health assistant, social worker);
- 5) "One year of high school";
- 6) "Other" (with an open space to fill in alternatives); and
- 7) "I have not decided."

The options were recoded as multinomial variables within four categories: 1) higher; 2) intermediate; 3) lower; and 4) undecided.

The undecided group was considered the reference group.

For gender, male gender was used as the reference group.

Residency refers to the county in which the student lives. The three northernmost counties in Norway were included: Nordland, Troms, and Finnmark. The northernmost county, Finnmark County, was used as the reference group.

Sámi ethnicity was measured by an assessment of Sámi parentage and Sámi language competency in the participants, their parents, and their grandparents as well as by self-identification. Participants who had one or more of these affiliations present were classified as having Sámi ethnicity (40,41). Sámi ethnicity was used as the reference group.

Socioeconomic status was measured via the obtaining of information about the occupation of the participants' parents and then classifying it according to the International Standard Classification of Occupation (42). This information was subsequently reclassified into five categories for each type of parent (i.e., "SES-father" and "SES-mother") with the use of the following categories: 1) "Higher administrative position"; 2) "Intermediate position"; 3) "Lower administrative position"; 4) "Primary industry"; and 5) "Blue-collar worker." Those whose positions were unknown were small in number and

classified as missing. Option 5 (“Blue-collar worker”) was used as the reference group.

Religious group membership by Laestadian affiliation was measured by answers that encompassed three levels of affiliation: 1) the youth’s self-identified affiliation; 2) the parents’ affiliation; and 3) the grandparents’ affiliation. Participants with one or more of these affiliations were classified as having Laestadian affiliation, and Laestadian affiliation was used as the reference group.

Peer support (Cronbach’s $\alpha = 0.84$) was measured with the use of a scale from the NorHealth statistics bank of the Norwegian Institute of Public Health (<http://www.norgesshelsa.no>), which was based on the following four statements: “I feel closely attached to my friends,” “My friends value my opinions,” “I can help/support my friends,” and “I can count on my friends when I need help.” This study used a four-point Likert scale that ranged from “Completely agree” [1] to “Completely disagree” [4] and that was operationalized on the basis of the mean.

Parental support (Cronbach’s $\alpha = 0.88$) was measured with the use of a scale from the NorHealth statistics bank of the Norwegian Institute of Public Health, which was based on the following five statements: “I feel attached to my family,” “My family takes me seriously,” “My family values my opinions,” “I mean a lot to my family,” and “I can count on my family when I need help.” This measure used a four-point Likert scale that ranged from “Completely agree” [1] to “Completely disagree” [4] and that was operationalized on the basis of the mean.

Parental involvement was measured with the use of a scale that was based on a four-item version of the Parental Involvement Scale (Cronbach’s $\alpha = 0.78$) used by Alsaker and colleagues (43) and that contained the following statements: “My parents know where I am at and what I do on the weekend,” “My parents know where I am and what I do on weekdays,” “My parents know who I spend my leisure time with,” and “My parents like the friends I spend time with.” This variable was measured with the use of a four-point Likert scale that ranged from “Completely agree” [1] to “Completely disagree” [4] and that was operationalized on the basis of the mean.

Class affiliation (Cronbach’s $\alpha = 0.79$), which assessed each student’s social standing in and opinion of school, was measured with the use of a scale from the NorHealth statistics bank of the Norwegian Institute of Public Health and was based on the following four statements: “I like it at school,” “I have much in common with my fellow school mates,” “I feel attached to my school class,” and “My class friends value my opinions.” This study used a

four-point Likert scale that ranged from “Completely agree” [0] to “Completely disagree” [3] and that was operationalized on the basis of the mean.

Teacher affiliation (Cronbach’s $\alpha = 0.80$) was measured with the use of a scale from the NorHealth statistics bank of the Norwegian Institute of Public Health, which was based on the following four statements: “Teachers value my opinions,” “Teachers appreciate me,” “Teachers help me with school work when needed,” and “Teachers help me with personal problems when needed.” This measure was based on a four-point Likert scale that ranged from “Completely agree” [0] to “Completely disagree” [3] and that was operationalized on the basis of the mean.

The Strengths and Difficulties Questionnaire (SDQ) consists of five subscales, each of which contains five questions. We used three of these subscales as measures of psychosocial health: the emotional symptom scale (SDQ-emotions; Cronbach’s $\alpha = 0.70$); the hyperactivity-inattention scale (SDQ-hyper; Cronbach’s $\alpha = 0.64$); and the conduct problem scale (SDQ-conduct; Cronbach’s $\alpha = 0.47$). The scores for these subscales ranged from 0 to 10, with the lowest score indicating the least amount of difficulty. Each question was scored from 0 to 2, with 0 indicating no problems and 2 indicating great worries and large problems. The scales were operationalized on the basis of the mean scores of the five questions.

The average mark variable was based on the average of four central subjects: mathematics, Norwegian, English, and social science. Scores ranged from 1 to 6 (1 = poor, 6 = excellent). For this variable to be included, the participant had to report a mark for at least one of the four subjects.

School-related stress (Cronbach’s $\alpha = 0.66$) was measured with the use of a scale from the NorHealth statistics bank of the Norwegian Institute of Public Health, which was based on the following questions: “Have you ever experienced any of the following: ‘Considerable pressure to succeed at school?’, ‘Considerable pressure from others to succeed/do well at school?’, ‘Difficulty concentrating in class?’, or ‘Difficulty understanding the teacher when he/she is teaching?’” This measure was based on a three-point Likert scale that ranged from “No” [1] to “Yes, often” [3] and that was operationalized on the basis of the mean.

Statistical Analysis

Chi-squared tests were applied to determine whether the independent variables of demographic characteristics and group membership were related to educational aspirations.

One-way analyses of variance were used to compare the differences between various aspirational

levels in relation to independent continuous variables on the basis of mental health and psychosocial factors. The Tukey honest significant different test was used for post hoc analysis.

Unadjusted logistic regression analysis was used to analyze educational aspirations in relation to each independent variable.

A fully adjusted block-wise regression analysis was performed for the total sample, with all variables from the univariate analysis controlling for each other. We used a random-effects model followed by a multilevel multivariate logistic model (44).

Cronbach's alpha was employed as a measure of internal consistency reliability, with a value of 0.7 or more considered acceptable.

The sample under analysis is population based, and statistical tests have proved that the sample has a normal distribution. We can thus ensure that the necessary assumptions surrounding normality exist.

The significance level was set to $p = .05$ for all statistical tests. SPSS software version 21 was used for all analyses.

Results

The distribution of the different categories of educational aspiration is as follows: higher, 23.7%; intermediate, 18.9%; lower, 32.9%; and undecided, 24.5% (Table 1).

Females showed a fairly equal distribution among the four aspiration levels, however, the distribution among males showed greater variation. As compared with males, females had significantly higher and intermediate educational aspirations; males' aspirations for lower education were significantly higher. Moreover, we found no gender differences for the undecided group of adolescents. The results revealed a significant ethnic difference among indecisive adolescents, with Sámi adolescents exhibiting greater indecisiveness. Adolescents from Nordland, Troms, and Finnmark Counties differed with regard to their levels of aspiration and indecisiveness. Specifically, adolescents from Finnmark County showed significantly lower aspirations and significantly more indecisiveness as compared with adolescents from Nordland and Troms counties.

Non-Laestadian adolescents reported significantly higher aspirations than Laestadian adolescents, but no significant differences were observed for the other three groups.

The SES-mother and SES-father variables were significant predictors of higher and lower aspirations, respectively. Adolescents whose fathers worked in medium administrative positions tended to aspire to higher levels of education, whereas adolescents whose fathers worked in the primary industries tended to aspire to lower levels of education. By

contrast, adolescents whose fathers worked in the primary industries were more likely to report having lower aspirations, and participants whose fathers worked in medium administrative positions were less likely to report having lower aspirations. Adolescents whose mothers worked in higher and medium administrative positions were more likely than adolescents whose mothers worked in blue-collar occupations or in the primary industries to aspire to higher levels of education. Adolescents whose parents worked in the primary industries and blue-collar occupations showed the same significant patterns of lower aspirations. Parental SES was not significantly associated with aspiring to an intermediate level of education or with being undecided about one's educational aspirations.

Table 2 illustrates the statistically significant differences for all types of educational aspirations related to mental health and psychosocial factors. The post hoc analysis showed the greatest difference between higher and lower aspirations on the basis of average mark and hyperactivity and attention problems. Higher aspirations were associated with lower scores for hyperactivity and attention problems (mean deviation, -1.21 [95% confidence interval, -1.42 to -1.00; $p \leq .001$]). Vocational aspirations were associated with lower average grades (mean deviation, -1.04 (95% confidence interval, -1.12 to -1.00; $p \leq .001$)). The full results are not shown.

Unadjusted logistical regression analyses of the predictors of educational aspirations are shown in Table 3. The undecided group is the reference group.

Higher average mark, school-related stress, negative peer support, and a stronger class and teacher affiliation were associated with higher aspirations. Laestadian affiliation was also more significantly associated with higher aspirations than non-Laestadian affiliation. Analyses of the interactions among gender, Laestadian affiliation, and Sámi ethnicity showed no statistical significance for any interaction, except for the effect of the interaction between gender and Laestadian affiliation on an intermediate level (odds ratio, 0.283 [range, 0.128 to 0.623; $p = 0.002$]) and a strong tendency for a lower level of educational aspirations (odds ratio, 0.512 [range, 0.257 to 1.020; $p = .057$]). Hence, Laestadian affiliation and male gender were found to be positively associated with intermediate and lower educational aspirations.

Residency in the southernmost counties of Nordland and Troms was significantly associated with higher levels of educational aspirations as compared with residency in the northernmost county of Finnmark.

An analysis of the interaction between residency and Sámi ethnicity, after adjustment for certain

TABLE 1. Demographic Characteristics for Educational Aspirations by Gender, Ethnicity, Religious Group Membership in Laestadianism, Residency and Socioeconomic Status

Variables (%)	n	Educational Aspirations			
		Higher n=1078	Intermediate n=857	Lower n=1497	Undecided n=1114
Gender (%):					
Female	2413	24.5	22.2	25.5	23.7
Male	2388	20.4	13.5	36.9	22.7
X ² p		11.58 p=0.001	61.77 p=0.001	73.30 p=0.001	0.69 p=0.41
Ethnicity (%):					
Sámi	450	24.5	15.9	26.6	28.0
Non-Sámi	3999	22.8	18.1	30.9	22.8
X ² p		0.71 p=0.40	1.35 p=0.25	3.44 p=0.06	5.90 p=0.02
Religious group membership in Laestadianism (%):					
Laestadian affiliation	304	14.8	17.2	35.0	25.9
Non-Laestadian affiliation	4577	23.0	17.9	30.9	23.0
X ² p		10.61 p=0.001	0.10 p=0.75	2.17 p=0.14	1.32 p=0.25
Residency (%):					
Nordland	2657	22.3	17.9	32.1	22.0
Troms	1587	23.5	19.0	28.6	23.8
Finnmark	637	20.3	14.8	33.6	27.0
X ² p		2.73 p=0.26	5.40 p=0.07	7.43 p=0.02	7.58 p=0.02
SES*-father (%):					
Higher adm. position	499	27.5	19.5	20.3	26.5
Mediate adm. position	1092	33.9	19.7	18.7	23.8
Lower adm. position	450	18.3	18.3	35.3	21.5
Primary industry	385	11.5	17.6	41.5	22.3
Blue-collar worker	1240	16.4	17.2	38.7	22.7
X ² p		142.77 p=0.001	3.01 p=0.56	161.63 p=0.001	4.26 p=0.37
SES*-mother (%):					
Higher adm. position	173	32.4	17.3	21.4	23.1
Mediate adm. position	1410	31.2	20.0	20.8	23.4
Lower adm. position	1420	18.5	17.5	34.3	23.5
Primary industry	79	12.7	21.5	39.2	22.8
Blue-collar worker	454	14.1	17.2	44.0	20.1
X ² p		101.15 p=0.001	4.27 p=0.37	120.65 p=0.001	2.47 p=0.65

Note. SES* = Socioeconomic Status

TABLE 2. One-way ANOVA of Mental Health and Psychosocial Health Factors and Educational Skills by Educational Aspirations

Variables	n	Educational Aspirations				F p
		Higher n=1078 M (SD)	Intermediate n=857 M (SD)	Lower n=1497 M (SD)	Undecided n=1114 M (SD)	
<i>Psychosocial factors*</i>						
Peer support (4-16)	4486	5.46 (1.98)	5.40 (1.80)	5.73 (2.05)	5.75 (2.05)	8.87 p=0.001
Parental support (5-20)	4477	6.97 (2.66)	6.96 (2.72)	7.45 (2.88)	7.18 (2.86)	8.22 p=0.001
Parental involvement (4-16)	4488	6.24 (2.13)	6.13 (2.05)	6.74 (2.40)	6.39 (2.19)	17.34 p=0.001
Class affiliation (0-12)	4487	3.01 (2.50)	3.31 (2.46)	3.74 (2.72)	3.57 (2.67)	18.05 p=0.001
Teacher affiliation (0-12)	4475	3.93 (2.74)	4.19 (2.69)	4.72 (2.97)	4.44 (2.77)	17.28 p=0.001
<i>Mental health factors*</i>						
SDQ**-emotions (0-10)	4511	2.40 (2.15)	2.79 (2.20)	2.50 (2.21)	2.61 (2.23)	5.49 p=0.001
SDQ**-hyper (0-10)	4513	3.42 (2.11)	3.90 (2.09)	4.63 (2.05)	4.26 (2.06)	76.53 p=0.001
SDQ**-conduct (0-10)	4511	1.85 (1.42)	1.85 (1.34)	2.37 (1.62)	2.08 (1.49)	34.96 p=0.001
<i>Educational skills*</i>						
Average mark (1-6)	4203	4.48 (0.65)	4.11 (0.65)	3.44 (0.71)	3.93 (0.78)	446.80 p=0.001
School-related stress (4-12)	4517	6.89 (1.90)	7.13 (1.91)	7.47 (2.00)	7.22 (1.95)	18.79 p=0.001

Note. * For all variables, lower scores indicate better outcomes, except for average mark, for which higher scores mean better marks

TABLE 3. Unadjusted Logistic Regression Analysis of Educational Aspirations

Variables	Educational Aspirations		
	Higher ¹	Intermediate ¹ OR; 95% CI	Lower ¹
Male gender	1.15(0.97-1.36) ^{p=0.10}	1.57(1.31-1.89) ^{p=0.001}	0.66(0.57-0.77) ^{p=0.001}
Sámi ethnicity	1.14(0.87-1.50) ^{p=0.36}	1.40(1.03-1.91) ^{p=0.03}	1.42(1.09-1.86) ^{p=0.01}
Laestadian affiliation	1.75(1.19-2.55) ^{p=0.01}	1.17(0.81-1.69) ^{p=0.39}	1.00(0.73-1.35) ^{p=0.97}
Nordland county ²	1.36(1.05-1.76) ^{p=0.02}	1.49(1.12-1.97) ^{p=0.01}	1.18(0.93-1.48) ^{p=0.17}
Troms county ²	1.32(1.00-1.73) ^{p=0.05}	1.46(1.09-1.97) ^{p=0.01}	0.97(0.76-1.24) ^{p=0.80}
Parental SES ³	1.94(1.36-2.77) ^{p=0.001}	1.09(0.76-1.56) ^{p=0.64}	0.45(0.33-0.62) ^{p=0.001}
Higher adm. position			
Parental SES ³	2.23(1.62-3.05) ^{p=0.001}	1.27(0.93-1.73) ^{p=0.13}	0.57(0.44-0.74) ^{p=0.001}
Medium adm. position			
Parental SES ³	1.19(0.84-1.68) ^{p=0.33}	1.04(0.74-1.45) ^{p=0.83}	0.96(0.74-1.26) ^{p=0.78}
Lower adm. position			
Parental SES ³	0.83(0.46-1.48) ^{p=0.52}	1.01(0.60-1.71) ^{p=0.98}	0.91(0.59-1.39) ^{p=0.66}
Primary industry			
<i>Mental health factors:</i>			
SDQ**-emotions	0.96(0.92-1.00) ^{p=0.029}	1.04(1.00-1.08) ^{p=0.075}	0.99(0.95-1.02) ^{p=0.40}
SDQ**-hyperactivity	0.82(0.79-0.85) ^{p=0.001}	0.92(0.88-0.96) ^{p=0.001}	1.09(1.05-1.13) ^{p=0.001}
SDQ**-conduct	0.89(0.84-0.95) ^{p=0.001}	0.90(0.85-0.96) ^{p=0.001}	1.13(1.07-1.18) ^{p=0.001}
<i>Psychosocial factors:</i>			
Peer support	0.93(0.89-0.97) ^{p=0.001}	0.91(0.87-0.96) ^{p=0.001}	1.00(0.96-1.03) ^{p=0.84}
Parental support	0.97(0.94-1.00) ^{p=0.07}	0.97(0.94-1.00) ^{p=0.08}	1.03(1.01-1.06) ^{p=0.02}
Parental involvement	0.97(0.93-1.01) ^{p=0.11}	0.95(0.91-0.99) ^{p=0.008}	1.07(1.03-1.11) ^{p=0.001}
Class affiliation	0.92(0.89-0.95) ^{p=0.001}	0.96(0.93-1.00) ^{p=0.03}	1.02(0.99-1.05) ^{p=0.11}
Teacher affiliation	0.94(0.91-0.97) ^{p=0.001}	0.97(0.94-1.00) ^{p=0.05}	1.04(1.01-1.06) ^{p=0.01}
<i>Educational skills:</i>			
Average mark	3.30(2.87-3.80) ^{p=0.001}	1.42(1.24-1.62) ^{p=0.001}	0.39(0.35-0.44) ^{p=0.001}
School-related stress	0.91(0.87-0.95) ^{p=0.001}	0.98(0.93-1.02) ^{p=0.30}	1.06(1.02-1.11) ^{p=0.002}

Note. SES* = Socioeconomic status, SDQ** = Strength and Difficulties Questionnaire
Reference group: ¹ Undecided educational aspirations; ² Finnmark County; ³ Blue-collar workers

TABLE 4. Fully Adjusted Blockwise Logistic Regression by Educational Aspirations

Variables	Educational Aspirations		
	Higher ¹	Intermediate ¹ OR	Lower ¹
Male gender	0.81(0.64-1.02) ^{p=0.071}	1.14(0.89-1.46) ^{p=0.295}	0.63(0.50-0.79) ^{p=0.001}
Sámi ethnicity	0.78(0.54-1.11) ^{p=0.167}	1.14(0.77-1.68) ^{p=0.527}	1.50(1.03-2.17) ^{p=0.033}
Laestadian affiliation	1.47(0.72-3.01) ^{p=0.296}	0.99(0.50-1.95) ^{p=0.969}	0.95(0.52-1.71) ^{p=0.858}
Nordland county ²	1.57(1.12-2.18) ^{p=0.008}	1.41(1.00-1.99) ^{p=0.052}	0.99(0.73-1.35) ^{p=0.958}
Troms county ²	1.37(0.97-1.93) ^{p=0.070}	1.23(0.86-1.76) ^{p=0.259}	0.78(0.56-1.08) ^{p=0.130}
Parental SES ³	1.19(0.79-1.78) ^{p=0.411}	0.92(0.61-1.38) ^{p=0.679}	0.60(0.41-0.87) ^{p=0.007}
Higher adm. Position			
Parental SES ³	1.33(0.93-1.92) ^{p=0.120}	1.20(0.84-1.70) ^{p=0.315}	0.71(0.52-0.97) ^{p=0.029}
Medium adm. Position			
Parental SES ³	1.06(0.71-1.56) ^{p=0.789}	1.06(0.73-1.54) ^{p=0.773}	1.07(0.78-1.48) ^{p=0.664}
Lower adm. Position			
Parental SES ³ primary industry	0.98(0.50-1.92) ^{p=0.950}	1.04(0.54-2.00) ^{p=0.919}	1.30(0.75-2.25) ^{p=0.344}
SDQ**-emotions	1.03(0.97-1.09) ^{p=0.29}	1.09(1.03-1.15) ^{p=0.004}	1.03(0.97-1.09) ^{p=0.332}
SDQ**-hyperactivity	0.88(0.83-0.94) ^{p=0.001}	0.96(0.90-1.02) ^{p=0.199}	1.01(0.95-1.07) ^{p=0.752}
SDQ**-conduct	1.02(0.94-1.11) ^{p=0.678}	0.95(0.87-1.04) ^{p=0.258}	1.02(0.94-1.10) ^{p=0.701}
Peer support	0.93(0.87-0.99) ^{p=0.016}	0.95(0.90-1.01) ^{p=0.131}	0.94(0.89-0.99) ^{p=0.026}
Parental support	1.02(0.98-1.07) ^{p=0.383}	0.99(0.94-1.04) ^{p=0.654}	0.99(0.94-1.03) ^{p=0.523}
Parental involvement	1.07(1.01-1.14) ^{p=0.014}	1.00(0.94-1.06) ^{p=0.978}	1.06(1.01-1.12) ^{p=0.021}
Class affiliation	0.96(0.91-1.00) ^{p=0.072}	0.98(0.93-1.03) ^{p=0.412}	0.99(0.95-1.04) ^{p=0.675}
Teacher affiliation	0.99(0.95-1.04) ^{p=0.691}	1.00(0.96-1.05) ^{p=0.937}	1.01(0.97-1.06) ^{p=0.526}
Average mark	2.98(2.50-3.56) ^{p=0.001}	1.21(1.02-1.43) ^{p=0.027}	0.40(0.34-0.47) ^{p=0.001}
School-related stress	1.06(0.99-1.13) ^{p=0.084}	1.00(0.93-1.07) ^{p=0.984}	0.99(0.93-1.06) ^{p=0.821}

Note. SES* = Socioeconomic status, SDQ** = Strength and Difficulties Questionnaire
Reference group: ¹ Undecided educational aspirations; ² Finnmark County; ³ Blue-collar workers

variables, showed no statistical significance. Because the SES-mother and SES-father variables provided the same results as those obtained by assessing demographic characteristics (see Table 1), the two groups were recoded as parental SES. Parental SES associated with high and medium administrative positions was significantly associated with higher educational aspirations.

Female gender, residency in Nordland and Troms, and average mark was all significantly associated with intermediate educational aspirations as well as the absence of externalized symptoms (as represented by hyperactivity, attention, and conduct problems). Several psychosocial factors (e.g., peer support, parental involvement, class and teacher affiliation)

were significantly associated with intermediate educational aspirations.

Lower educational aspirations were positively associated with both male gender and Sámi ethnicity; they were negatively associated with parental SES that reflected high and medium administrative positions. Vocational school aspirations were also significantly associated with mental health factors, lower average mark, and psychosocial factors such as parental support, parental involvement, and teacher affiliation. Adolescents who aspired to obtain a vocational degree appeared to have significantly more difficulty coping with schoolwork.

Table 4 shows the fully adjusted logistical regression analysis for each level of educational aspiration after controlling for all independent factors. Higher average mark was associated with higher educational aspirations, whereas lower average mark was significantly associated with lower aspirations.

Both negative peer support and positive parental involvement were statistically significantly associated with higher and lower aspirations, respectively.

Adolescents with fewer hyperactivity and inattentive symptoms had significantly higher aspirations, whereas adolescents with emotional symptoms reported having intermediate aspirations.

Parental SES for those in higher or medium administrative positions was negatively associated with lower aspirations.

Adolescents who resided in the southernmost county of Nordland had significantly higher educational aspirations than adolescents from the northernmost county of Finnmark.

Male adolescents and adolescents with Sámi ethnicity were found to have significantly more vocational aspirations.

Discussion

This study is the first to explore the influence of mental health, psychosocial factors, and educational skills on educational aspirations among indigenous and non-indigenous adolescents in Arctic Norway.

The most significant difference among aspiration levels was generally observed between higher and lower aspirations. In line with the results of earlier studies, the observed significant effects of educational skills (as measured by average mark) showed inverse outcomes for the two levels of aspiration (10,12). These findings may indicate that adolescents with lower aspirations and lower average mark feel obliged to choose vocational occupations. By contrast, higher parental SES is associated with support for both higher and lower aspirations, which also confirms the findings of other studies.

Adolescents from the southernmost region of Norway and from less remote areas had significantly

higher academic aspirations as compared with adolescents from the northernmost region, which has among the lowest educational levels and poorest living conditions in Norway. It also contains a remote population with more workers in the traditional primary industries, fewer vocational options, and fewer highly educated role models as compared with the rest of Norway. The current study shows the influence of the environmental and community contexts on the educational aspirations of young people.

The fully adjusted analyses showed significant differences between Sámi and non-Sámi adolescents in terms of lower educational aspirations but not intermediate and higher aspirations. Although we expected Sámi adolescents to be more indecisive, our findings did not confirm this expectation: the level of higher and intermediate aspirations did not differ between Sámi adolescents and their non-indigenous peers. This result may be evidence of the attained socioeconomic equality of the Sámi population that has occurred during recent decades (27;33-36) and of their improved levels of academic competence.

The finding that males showed significantly greater vocational aspirations than females is supported by other studies and by blocked opportunity theory. This finding may indicate that males exhibit lower aspirations across ethnic groups and religious affiliations. Indeed, our findings revealed that females tend to have greater academic aspirations regardless of ethnicity, as expected.

Mental health factors with respect to the significant association between lower levels of hyperactivity and inattention problems and higher aspirations support the assumption that hyperkinetic problems can be obstacles to school achievement. Hyperkinetic problems are characterized by the association between coping skills and learning abilities, hyperactivity, and inattention. The working memory performance of children with hyperkinetic problems is predictive of their academic achievement (9). Breslau and colleagues (9) suggested that inefficiency in learning can influence the aspirations of individuals and families given the potential benefits of continuing education versus pursuing alternative careers that do not require formal education. The finding of a significant relationship between emotional symptoms and educational aspirations at the intermediate level may indicate the desire to seek security and stability via a shorter and less demanding undergraduate degree. Interestingly, emotional problems did not appear to affect adolescents' aspirational levels; thus, emotional problems do not appear to be an obstacle to the choice of level of educational aspiration.

Our findings show that psychosocial factors influence educational aspirations through peer

support and parental involvement. One explanation for the negative influence of peer support could be the need for adolescents to feel average rather than exceptional among their peers. Both higher aspirations and blue-collar aspirations for vocational training can be negatively perceived by peers as non-average; therefore, adolescents are more insecure about aspiring for these educational levels. The significance of parental involvement in academic aspirations is well known, and this survey confirms this significance, with vocational aspirations being based on the assumption that parents encourage their children to achieve on the level that is presumed to be manageable.

The heterogeneous undecided group is large and interesting, and it represents 24.5% of all adolescents in this study. According to Erikson (45) and Marcia (46), adolescence is the period of identity formation that includes the formation of a professional identity. This important developmental phase includes different stages, from the two immature stages of identity diffusion and foreclosure to exploration and the most mature identity stage, which is the achievement of an identity. One can reasonably assume that educational aspirations as a measure of professional identity formation or maturity follow the same pathway and that this identity formation varies among individuals. Although some young adolescents have not yet begun the process of exploring their educational options (diffusion stage), others may follow their parents' advice or directions without exploring their own aspirations (foreclosed). Those at the less mature stages may be in the beginning or middle of their exploration stage and may still be undecided, whereas others have both explored their alternatives and determined their educational direction. As a result of the young ages of the adolescents in this study, the number of indecisive youths is not surprising. Because males are known to develop their identities during later developmental stages, gender differences in educational aspirations may exist. According to identity formation models, the influence of environmental factors is important, to initiate and support identity formation. The lack of parental role models and negative peer support may act as negative environmental conditions and thereby explain the indecisiveness seen in this study.

Strengths and Limitations

The major strengths of this study are the population-based design and the high response rate, which add to the generalizability of the study. However, the reliability and validity of short scales (e.g., the SDQ for conduct problems) may be questioned (47). A cross-sectional study design is limited, and it does not indicate the causal direction of associations.

Moreover, the survey was answered in classrooms during school time, so the cluster effect could have influenced the responses. Furthermore, all information obtained for the study was based on self-reports, and it may thus be affected by recall bias. Small effect sizes must be considered. In the multi-ethnic survey sample, 10% of the adolescents reported being of Sámi ethnicity, and 6% of the adolescents reported Laestadian affiliation.

Conclusion

This study supports earlier findings that addressed the strong influence of good educational skills on educational aspirations. Geographical findings showed that adolescents from the southernmost county had significantly higher levels of academic aspirations. The study reveals that mental health problems must be addressed to empower adolescents with respect to their aspirations. Facilitating parental involvement, ensuring school support, and providing supportive clinicians are urgent tasks that must be addressed to ensure that hyperactive and inattentive youths have the tools that they need to cope with schoolwork and to foster their educational aspirations. Emotional problems should not be considered an obstacle to higher-level aspirations, as this study revealed more intermediate aspirations among individuals with these concerns.

More research is needed to determine the associations between educational aspirations and high school completion as well as subsequent work situations given the role of adolescence as a formative stage of life.

Clinical Significance

In this study, hyperactivity and attention problems were observed to be obstacles to higher educational aspirations. Because educational aspirations influence educational attainment and later success in the work force, hyperkinetic disorders need to be diagnosed and treated to ensure that adolescents with these issues have equal opportunities to receive higher education. Such adolescents can be helped through cooperation among parents, teachers, and clinicians.

In addition, adolescents with emotional problems who aspire to intermediate levels of education need the same type of support and treatment to explore and find the tools they need if they have the skills and motivation to aspire to higher educational levels.

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