

Psycho-Social Well-Being among School children in the Northern Areas of Finland, Sweden, Norway and North-West Russia

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Abstract

The paper presents the results of a comparative research into the structure and level of psycho-social well-being among schoolchildren. A total of 1,406 pupils, 13 to 15-year old, from 27 schools in the Barents Region replied to the WHO Health and Behavior of School-Aged Children questionnaire (HBSC). The data were analyzed by using LISREL technique firstly to model the structure of psycho-social well-being, and secondly to explain well-being by variables bearing on school experiences and out-of-school activities. The results indicated that psycho-social well-being was a three-partite construct comprising psychic, social and economic well-being. In predicting psychic and social well-being by school-related variables, out-of-school factors and economic well-being, two competing model were tested for their suitability into the data. In model one, demographic variables, economic well-being and out-of-school factors were set parallel predictors of psychic and social well-being, bullying at school and being pressured by school work. In model two, mediating paths among predictors were allowed. The GFI and RMSEA values were equally good for the models. However, Akaike's Information Criterion made a difference between them; AIC indicating an overall fit was smaller for the first model. The modelling indicated that economic well-being had a strong indirect effect on social and psychic well-being. It exerted its effect via such out-of-school variables as physical activity, use of computers and time used for homework. The results are discussed with respect to differences between the four countries.

Introduction

It has been widely acknowledged and reported that the state of school children's psychosocial health and well-being has deteriorated over the last few years (Luopa, Räsänen, Jokela, & Rimpelä, 2005). Research has shown that more problems have developed in schools in the psychosocial field of health, while at the same time physical health has improved (Bardy, Salmi, & Heino, 2001.) In recent years the term "psychosocial" has been used with increasing frequency to describe children's health and well-being. Firstly achieving the psychosocial functions of children represents a normal developmental stage; it is one of the most important stages of the life span, a transition from childhood towards adulthood. Secondly it has to do with the indicators of children's health status, which show that although their physical health has improved, psychological and social symptoms have increased. (Rimpelä, 2002; Välimaa & Danielson, 2004) In Finland this has been a topic of discussion since the beginning of this century. Historically the new generation of children has always had better welfare than the one before, in the mid 1990's there was a change; the psychosocial well-being and general welfare among Finnish adolescents did not increase anymore, infact it started to decrease (Rimpelä, 2001). A follow-up study of Finnish adolescents showed that schools play an important role in young people's well-being and that the range of

measures that can be used to improve pupil's health is wider than those directly related to health (Karvonen, Vikat, & Rimpela, 2005).

Still it is rather unclear why school children experience more and more problems in their psychosocial well-being. One aim of this article is to highlight the structure of the psychosocial well being of school children particularly in the Northern areas of Finland, Sweden, Norway and North-Western Russia, the so called Barents Region. According to Arctic Human Development Report (Hild & Stordahl, 2004) it is acknowledged that health challenges are unique to each Arctic community and there is a need for flexibility in community based services. There is also a need for flexibility and common understanding to point out the reasons behind the state of psychosocial well-being, the state of school systems and different cultural foundations. It is also important to be aware that differences in living conditions and schooling systems exist within each country as well as between the countries.

Earlier research highlighted several hypotheses of the process that may have a detrimental effect on the school children's well-being. Research focus on subjective well-being (SWB) has increased and one aspect of it has been the children's Perceived Quality Of Life (PQOL). The PQOL appears to mediate children's interpersonal and intrapersonal behaviour (Huebner, Suldo, Smith, & McKnight, 2004). Linnakylä & Malin (1997) studied the quality of school life of 14-year old children in Finland and suggested that it needs to be examined from various perspectives and on many different levels. They also concluded that even though students' personal attitudes, competencies and aspirations are important, they also interact with each other, views of teachers', fellow students and eventually the culture of the whole school. Opdenakker & Van Damme (2000) studied the well-being of pupils' in school context using an eight item questionnaire. Their study indicated several school characteristics that are effective for both academic achievement and well-being, but the relative influence was higher on achievement than on the influence for well-being. Konu & Rimpelä (2002) used a General Subjective Well-being Indicator with 13 items to establish how well-being is divided between the individual and the context. They noticed that there was very little variation in the pupil's well-being between schools. The variation occurred mostly on an individual level. Karvonen et al. (2005) also had similar results.

According to Karvonen et al. (2005) it was not possible to find direct factors that explain the change of health complaints of school children in the four years between 1996 and 2000. Many school related factors, such as teacher-student relationships and academic achievement, were connected to well-being, but did not explain the rise in health complaints of the pupils. Whereas school atmosphere, contacts with teachers, involvement in class and at school, school regulations and infrastructure were among the best predictors of the well-being of Flemish pupils according to (Engels, Aelterman, Van Petegem, & Schepens, 2004). In Finland the school climate has been found to be worse than average in the OECD (Välijärvi & Linnakylä, 2002). According to Pulkkinen (2002) this is a sign of problems in the social capital of schools.

The concept of well-being consists of mental and physical health and stability, but also the interpersonal communication relations. According to the Oxford English Dictionary, "psychosocial" pertains to "the influence of social factors on an individual's mind or behaviour, and to the interrelation of behavioural and social factors; also more widely, pertaining to the interrelation of mind and society in human development" (*The Oxford English dictionary Elektroninen aineisto* 2002). A conceptual model of well-being in school, the School Well-Being model, has been defined by Konu and Rimpelä (2002).

They base their model on Erik Allard's (1989) model of well-being. Allardt has developed a Nordic model of well-being; He divides well-being into three parts: Having-part: meaning concrete living standard or living conditions; Loving-part: meaning the amount and quality of social relationships, such as friends and family; Being-part: meaning the means of self-fulfilment and self-respect of individuals.

In several psychological studies the life satisfaction is described to be a relevant measure of the level of one's subjective well-being (Seligson, Huebner, & Valois, 2005). Liking for school is close to work satisfaction and motivation, which is known to be an indicator of subjective well-being. According to Linnakylä & Malin (1997) the pupils' plans for further education were closely related to the liking for school. They suggested that school should provide joyful learning experiences to prevent a negative social and economical development in the future. Young people who enjoy school are more likely to feel good about them and to report high subjective well-being. Conversely, young people who do not enjoy school are more likely to perform unsatisfactorily, which may result in feelings of stress. (Samdal, Dur, & Freeman, 2004)42. Positive affect, negative affect, and life satisfaction are the three interrelated components that comprise subjective well-being (Seligson, Huebner, & Valois, 2005)356 In the last HBSC (Health and Behaviour of School-aged Children) study (2002) the highest level of liking school in the Nordic countries was in Norway where 32% of the 15-year-old pupils liked school a lot. The lowest level of liking school was in Finland, where only 4% of the pupils liked school a lot (Samdal, Dur, & Freeman, 2004). Finland was in last place in the comparison of 35 countries, Norway was in fourth place. In the former ArctiChildren-study liking school seemed to be at lower levels in Norway and Sweden and at higher levels in Finland and Russia compared to the national studies (Ahonen, 2006).

Aim

The aim of this study is three-fold. First, the study will identify indicators of psychosocial well-being as well as to point out differences in the level of well-being between the countries. Second, school children's leisure time activities will be analyzed focusing in particular on the differences between the countries. And finally, the role which school children's leisure time activities and stress factors at school play in well-being will be analyzed.

Material and methods

Participants

The participants of the study were 13-15 year old school children from comprehensive schools in northern parts of Finland (Lapland), Sweden (Norrbotten) and Norway (Finn mark) and North-West Russia (Murmansk region). The data was collected by researchers in each country, in Norway they were collected by a postal survey and in Finland, Sweden and Russia during the researchers' visits to schools. There were a total of 1,424 responses of which 52.6% were boys. The average age of the respondents was 14 years. In Russia there were 341 respondents (51.9% boys, average age 14.22 years, SD=1.32) from three schools. In Finland there were 408 respondents (54.7% boys,

average age 13.92 years, $SD=0.92$) from four schools. In Sweden there were 400 respondents (52.9% boys, average age 13.85 years, $SD=0.84$) from nine schools. In Norway there were 275 respondents (49.8% boys, average age 13.92 years, $SD=0.89$) from eleven schools. In each country there were schools that represented both urban and rural districts.

The pupils answered the questionnaire in schools during their school time. They could answer anonymously. The data was collected between May 2004 and April 2005 and was coded into an SPSS (Statistical Package for the Social Sciences) program. In this report the common data of all four countries is analyzed. The national version of the HBSC questionnaire was used in the study of each country. Only the mandatory variables of the questionnaire were common for each questionnaire. Altogether there were 89 common variables in this analysis, of which 60 were on the Likert scale. The comparison was possible to make based on these variables.

Materials

School children in the four countries filled in the WHO survey questionnaire Health and Behavior of School Aged Children (HBSC) on psychosocial well-being, (Currie, Roberts, & World Health Organization. Regional Office for Europe, 2004). The data was collected between May 2004 and April 2005. The research group in each country made a selection of the national questionnaire to be used. This study is based on the common measures in the four countries. In addition to background variables sex, age, grade and country, variables bearing on leisure time activities of school children, school related stress factors and well-being were used. The variables with their reliability coefficients (Cronbach's alpha) and abbreviations in parenthesis are described in more detail below.

Leisure time: Physical activity (Physic) was a two fold measure tapping physical activity on weekdays and weekends ($\alpha=.86$). Use of computer (Use of comp) measured computing on weekdays and weekends ($\alpha=.91$). Time used for homework (Hwork) was measured as time devoted to homework both on weekdays and weekends ($\alpha=.69$). Time spent with peers (Socrel) comprised socializing with peers after school, in the evening and time used for e-communication ($\alpha=.68$). Watching TV (TVwatch) was a compound measure of watching on weekdays and weekends ($\alpha=.85$).

School related stress factors: Being bullied (Bullied) was a single fold measure of the frequency of bullying experiences. Being pressured (Press) by school work measured the magnitude of pressure induced by school work, was also a single fold measure.

Well-being: Material well-being (Material) was measured by using an index consisting of the following four factors: whether a family owns a car, whether a school child has a bedroom of his/her own, whether a family has opportunities for a vacation and the number of computers in a family ($\alpha=.60$). Social well-being (Social) was measured using three factors of the quality of social relations with other school children ($\alpha=.72$). Psychic well-being (Psychic) was indicated by the absence of psychic and somatic symptoms, life satisfaction, school satisfaction, health status and satisfaction with one's academic achievement ($\alpha=.60$).

Procedures

The data was analyzed on three levels. First, for descriptive purposes means and standard deviations of the research variables were computed. In the case of well-being variables, latent variables were estimated with a mean of zero and a standard deviation of one. Cross-country differences were examined by performing ONEWAY ANOVAs. School children's leisure time activities were typologized with the aid of K-Means Cluster Analysis to find out whether there are different types of leisure time activities. Second, to construct a measurement model, a Confirmative Factor Analysis by using LISREL 8.3-program was performed to analyze the structure of well-being. In the final stage, two structural equation models for well-being were tested.

Results

Structure of Well-Being

The structure of well-being was first examined by performing explorative factor analyses both in the sub-samples and in the general sample. The observed variables appearing in Table 1 were used in the factor analyses with oblique rotations. The factors were extracted by using a generalized least squares method. The Eigen value criterion was set to >1 . Three factors could be extracted. Examining the solutions in the sub-samples indicated that the structures were similar in other countries except Sweden. The dimensions were denoted psychic, social and material well-being. The Swedish data differed in two respects; material well-being was not loaded on its own factor and psychic well-being was split into two separate factors. In the general sample, the structure of well-being was similar to that of the three other countries.

After preliminary analyses of the structure of well-being, a confirmatory factor analysis was performed using the LISREL 8 -program. The error variances of observed variables were freely estimated. Initially, the measurement model fit was moderate. Upon examination, several correlated error terms were found. There are two prescriptions: eliminate the most problematic indicators assuming that the content validity is not seriously impacted or re-specify the model retaining the items. In this case, the model was re-specified by freeing the error terms to correlate. The modelling of well-being indicated that it was comprised of three inter-related domains; i.e., psychic, social and material well-being. The measurement model had a good fit on the data with the following fit statistics: Chi-Square=61.53, $df=28$, $p<.000$; RMSEA=0.029; GFI= 0.99 an adjusted GFI= 0.98.

Table 1. The Measurement Model of Psycho-Social Well-Being: Standardized Solution with Loadings and Measurement Errors

Observed variables	Well-Being			
	Material	Social	Psychic	Error variance
Car	.69			.52
Comp	.67			.55
Accept1		.74		.46
Accept2		.72		.48
Accept3		.68		.53
Psychic symp			.43	.82
Somatic symp			.40	.84
Lifesat			.70	.51
Schosat			.49	.76
Healthstatus			.52	.73
Achlevel			.31	.90

Note: Car=owning a car; comp=number of computers; Accept=social acceptance; Psychic=psychic symptoms; somatic=somatic symptoms; Lifesat=satisfaction with life; Schosat=satisfaction with school; Healthsta=health status; Achlevel= satisfaction with achievement level

The latent variables of psychic, social and material well-being correlated significantly with one another. The correlation between psychic and social well-being was the highest ($r=.43$, $p<.000$). Material well-being had a higher correlation with social well-being ($r=.35$, $p<.000$) than with psychic well-being ($r=.13$, $p<.000$). The pattern of correlations suggests that the effect of material well-being on psychic well-being goes through social well-being. Next an effort is made to describe the country differences in well-being and school related stress factors of being bullied and pressured by school work. Latent well-being variables were estimated as factor scores with a mean of 0 and a standard deviation of 1.

Table 2. The Means of well-being and stress-factors at school by country

Country	Well-Being			Stress-factors	
	Material	Social	Psychic	Bullied	Pressure
Finland	-0.035	-0.018	-0.013	1.50	2.37
Sweden	0.839	0.464	0.128	1.15	2.31
Russia	-1.307	-0.642	-0.166	1.75	2.23
Norway	0.485	0.210	0.054	1.46	2.41
F(3,1406)	419.61	30.97	1.81	25.47	2.93
p	.000	.000	.144	.000	.033

The differences in the variables were examined by utilizing ANOVA. The analysis indicated that the level of psychic well-being was the same in all countries. However, a paired difference between Sweden and Russia was noticed to be significant ($t=2.25$, $p<.025$): psychic well-being was higher in Sweden. In regards to material and social well-being, the situation was different; Material well-being showed the largest variation between the countries. Material well-being was the highest in Sweden followed by Norway and Finland. Material well-being was the lowest in Russia. Social well-being followed the similar pattern; well-being being the highest in Sweden and the lowest in Russia.

Experiences of bullying were more frequent in Russian schools followed by Finnish and Norwegian schools. In Swedish schools bullying was not a big problem. Pressures induced by school work were more pronounced in Norwegian and Finnish schools. Pressures were less frequent in Russian schools.

Description of leisure time activities

Leisure time activities showed differences between the countries. Physical activity was the most pronounced in Sweden and the least frequent in Russia. Russian schoolchildren in turn spent more time on homework. Use of computer was the most frequent way of leisure activities in Norway. Time spent with peers was the most common in Russia and the least common in Sweden. Russian and Norwegian school children watched more TV on weekdays and weekends.

Table 3 . Leisure time activities by country

	Leisure Time Activities				
	Physact	Homework	Compuse	Socrel	Tvwatch
Finland	7.56	4.42	7.64	10.82	9.70
Sweden	8.84	4.45	7.75	9.02	8.32
Russia	6.26	7.29	6.58	14.13	12.08
Norway	7.66	3.98	8.58	11.98	10.37
F(3,1406)	25.65	157.83	10.95	93.96	74.81
p	.000	.000	.000	.000	.000

Note: Psysact=physical activity; Homework=time used for homework; Compuse=use of computer; Socrel=time with peers; Tvwatch=watching TV

To depict leisure time activities in a more global way, a cluster analysis using the variables appearing in Table 3 was performed. Initial cluster centres were updated iteratively to obtain the final centres. A four-cluster solution was the most informative and interpretable one. Clusters yielded by the analysis were denoted as follows: passive leisure time (all the activities below the mean), multiple activity leisure time (scoring high on peer relations, watching TV, using computer and time used for home work), amusement-oriented leisure time (scoring high on watching TV and computing), and physical activity oriented leisure time (scoring high on physical activity). The leisure time typology was cross tabulated with country to find out whether cross-country differences could be observed. Chi-Square=456.11 with 9df's ($p < .000$) indicated that differences appeared in the school children's way of life.

Physical activities and passive leisure time made up 68.5 % of Finnish children's activities. Among Norwegian children, amusement orientation and physical activities composed 72.6 % of all activities. Among Swedish and Russian children about 50 % belonged to one class of the typology. The Swedish children were mostly passive (44.9 %) in their leisure activities and to a lesser extent focusing on physical activities (35.9 %). The Russian children were mainly (56.6 %) multiple activity.

Prediction of well-being

Next, a path model for well-being will be constructed using LISREL. The aim of modelling is to find predictors for well-being out of two variable sets; i.e. out of school variables describing school children's way of life and daily activities, and school-related stress factors describing pressures due to school work and being bullied. The material domain of well-being is different from the two other ones, because it can be placed among out of school variables. Conceptually it operates rather as an antecedent for daily activities than as being influenced by these activities. It can also be regarded as an antecedent for social and psychic well-being, as indicated in the previous chapter.

In the structural model, all other variables except indicators of well-being were pseudo-latent variables; i.e. in the measurement model each variable was estimated by giving it a loading of 1 on an observed variable. Furthermore, they were estimated without measurement errors. Measurement errors were allowed to correlate to improve the fit of the model.

Table 4. Comparison of Structural Models

	Chi-Square	df	GFI	AGFI	RMSEA	AIC
Simple Model	206.81	86	0.98	0.97	0.031	413.10
Path Model	234.52	91	0.98	0.97	0.032	428.14

In the final stage, two sub-models were competing with each other; namely, a simple out of school predictor model without paths specified among predictors and a model allowing paths among the predictors. Technically, the models were equally fit on the most fit indices used. Akaike's Information Criterion (AIC) was lower, indicating a better overall fit, for the simple model. The choice between the models was made based on valuable information to be obtained from paths starting from material well-being and arriving in psychic and social well-being.

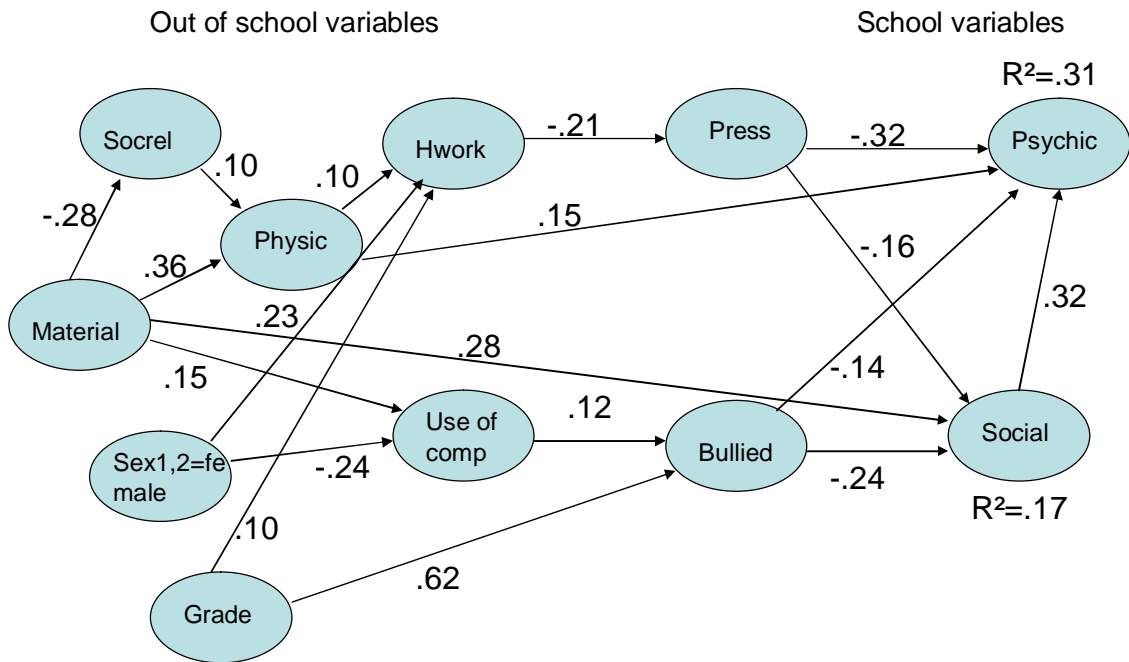


Figure 1. Predictors of Psychic and Social Well-Being by (GFI=0.98; CFI=0.97; X²=234 with df=91; RMSEA=0.032) (all the beta-coefficients p<.001)

The variance explained was 31% and 17% for psychic and social well-being respectively. Psychic well-being was directly predicted by high social well-being, not being bullied, low pressure at school work and frequent physical exercise. Psychic well-being is not directly responsive to material well-being, but it exerts its effect via mediating paths. The total effect of material well-being on psychic well-being is .35, p<.000 and it consists completely of the indirect effect. Material well-being is an important antecedent for school children's way of life and daily activities, such as the frequency of leisure time social relations, frequency of physical activity and time used for homework.

Social well-being was predicted by a low pressure in school work, not being bullied and high material well-being. Material well-being has the strongest contribution to social well-being. Counter to psychic well-being, the effect material well-being consists of both the direct and the indirect effect. The effects were 28, $p < .000$ and .09, $p < .000$ respectively.

School related stress factors, pressure in school work and being bullied, are responsive to leisure time activities. Time used for homework reduces pressures caused by school work. Use of computer increases a risk of being bullied. It is interesting that the affluence of the family indirectly increases the risk. Bullying is more common in higher grades. The indirect effect was mediated by the use of computer and being bullied.

Discussion and conclusions

The structure of school children's well-being was identical in the North-Western areas of Russia and Northern areas of Finland and Norway. It comprised dimensions of material, social and psychic well-being. In the Swedish data, material well-being did not impress upon its own factor. Furthermore, psychic well-being split into two factors; psycho-somatic symptoms and other indicators of psychic functioning. The data from all the countries were pooled to enable analysis on a more general level the structure and the predictors of well-being in the Northern areas. The problem is that the reliability of material well-being was somewhat lower in the Swedish data. In the general sample, the measurement model of well-being indicated that it consists of three inter-related factors: material, social and psychic well-being. Material well-being correlated ($r = .35$, $p < .000$) and ($r = .13$, $p < .000$) with social and psychic well-being. The correlation between social and psychic well-being was ($r = .43$, $p < .000$).

On psychic well-being no cross-country differences were observed. On the other hand, differences were the most pronounced for material well-being followed by social well-being. In the both cases a similar pattern emerged; i.e., well-being was the highest in Swedish and the lowest in Russian schools. Finnish and Norwegian schools were in between. Peer bullying was more frequently appearing in Russian, followed by Finnish and Norwegian schools. Pressures induced by school work were the most frequent in Norwegian and Finnish schools. They were the least frequent in Russian schools. The latter finding may be due to the fact that Russian school children devote more time for homework.

Leisure time activities showed variation between the countries. The types of leisure time activities were analyzed with the help of cluster analysis. The analysis yielded a four-type typology: passive, multiple activities, amusement oriented and physical activity oriented leisure time. Typical of the Finnish leisure time were physical activities and passive leisure time. The Swedish school children were similar to the Finnish ones. The majority of the Russian schoolchildren belonged to a multiple activity type. The Norwegian school children were physically active and amusement oriented.

The structural model of well-being showed the important role which material well-being plays in two respects. First, material well-being has a strong direct effect upon social well-being and a weaker, indirect, effect via the use of computers and being bullied. Second, material well-being has a strong indirect effect upon psychic well-being via social well-being and a path starting from material well-being and advancing via physical activity, homework and pressures due to school work to psychic well-being. Furthermore, the structural model indicated that material well-being is an important factor in forming school children's leisure time activities.

The use of computers seems to be a risk factor for peer bullying, which in turn lowers both social and psychic well-being. One interpretation offered is that children with lower social skills may use more computers which make them easy victims for bullying. Children from affluent families seem to have better opportunities for multiple activity leisure time, with the exception of socializing with peers. In this case, the relationship is negative showing that children use less time with peers after school and in evenings.

Time used for homework reduces academic pressures. The finding is in line with the considerations put forth by Cooper (1994) about the positive effects of homework. Homework has immediate learning and achievement effects. Moreover, it has also long-term effects which are related to the development of learner self-regulation and study habit. The interpretation offered is that better study habits and strategies lower pressures at school.

Peer bullying appears to be an important antecedent of low social and psychic well-being and also a consequence of excessive computing. In Swedish schools, measures are being planned (cf. Forsman, 2006). A special group at risk from bullying is a boy with few friends and a lot of time used for computing. This group is in need of support both at school and in leisure time to break the vicious circle of escaping from poor social relations to the virtual world of computing, which in fact makes the situation worse (cf. Engelberg & Sjöberg, 2004).

The results of the structural model suggest interventions on how to promote well-being. When the material side of well-being played such an important role in psychic well-being (indirect effect), one type of interventions may concentrate on how to prevent a negative course of events, starting from low material well-being via low physical activity, little time used for homework and high pressure due to school work and finally arriving in low psychic and social well-being, from taking place from advancing. In Russia, these kinds of measures are being planned and implemented in terms of ActiChildren II project. In one intervention, the target group comprises of schoolchildren's parents who will, for example, participate in parent workshops dealing with parenting skills. In another, school children will be implemented with focused school counselling (Tegeleva, 2006).

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