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# The Teacher and Classmate Support Scale

## *Factor Structure, Test–retest Reliability and Validity in Samples of 13- and 15-Year-Old Adolescents*

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**ABSTRACT** This article presents results on the factor structure, test–retest reliability and external validity of the Teacher and Classmate Support scale, a brief self-report measure on perceived support from teachers and classmates. The main study included 315 13-year-olds and 366 15-year-olds. At 7–10 days after the main study, a subsample of 57 13-year-olds and 51 15-year-olds took part in a retest study. A confirmatory factor analysis of the scale showed that a correlated 2-factor model fitted the data well in both age groups, indicating that the division into a teacher and a classmate subscale is a valid measurement model. Both subscales correlated moderately with school motivation, but weakly with a measure on subjective health complaints. Convergent validity was indicated by moderate to strong relationships between the teacher subscale and an independent measure on teacher support, and by moderate relationships between the classmate subscale and an independent measure on friend support. Test–retest correlations were 0.69 for the teacher subscale and 0.74 for the classmate subscale. The scale offers promise as a parsimonious self-report measure on classmate and teacher support, but more evidence is needed before the scale can be recommended for wider research purposes.

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## **Introduction**

Social support derived from relationships at school is currently the subject of several lines of research. Within health promotion research, the creation of supportive school environments is a central object of several approaches (e.g. Cauce and Srebnik, 1989; Coie et al., 1989; Millstein, 1993; Perry et al., 1993), as well as emphasized in large cross-national studies, for example HBSC 1993/94 (King et al., 1996). More specifically, social support at school has been hypothesized to facilitate academic achievement (Cutrona et al., 1994; Dubow et al., 1991; Felner et al., 1995; Grannis, 1992; Samdal et al., 1998), and to prevent school-related behavioural problems (Dubow et al., 1991; Felner et al., 1995). The current interest in this field suggests a need for valid measures of school-related social support, but few measures focus on this area of social support. Addressing the lack of school-specific measures, this article presents results on the structure, reliability and validity for the Teacher and Classmate Support scale (TCMS). The scale has been developed as part of 'Health behaviour in school-aged children. A WHO cross-national study (the HBSC study)' (Aaro et al., 1986; Smith et al., 1992; Wold et al., 1994), grounded on the notion that school may be regarded as the working environment for adolescents, with social support from teachers and classmates being essential for adolescents', academic and healthy adjustment (Samdal et al., 1998; Wold et al., 1994).

## **Social support at school**

Social support at school can be operationalized in several ways. Though global definitions of social support like Cobb's (1976) '... information that leads a person to believe she or he is cared for and loved, esteemed and valued or belongs to a network of communication and mutual obligation' has been popular, Barerra's (1986) distinction between definitions of social embeddedness, enacted support, and perceived support offers more scope for operationalization.

Definitions of social embeddedness refer to the existence or absence of network ties with significant others, which in the school setting could be operationalized as number of close friends in the class. However, a problem with this way of measuring support is the fact that the mere existence of ties does not address the quality of transactions. Network ties at school may be a source of conflict as well as of support.

Definitions of enacted support focus on the support that is actually received or provided. This operationalization captures the important aspect that support constitutes an actual resource in the face of external demands. However, as pointed out by Barerra (1986), this creates methodological problems, because support in this instance is confounded by demands. Higher demands will tend to elicit higher amounts of

support. In the school setting this measurement problem could arise because students who do not cope with academic demands, may receive more actual support than students who cope well.

'Perceived support' definitions of support refer to the perceived satisfaction with, and the helpfulness and availability of support. In the school setting perceived support could be operationalized as the degree to which teachers are perceived as helpful or accepting. It may be argued that this way of measuring social support removes the focus from the actual transactions of support and leads to a 'psychologicalization' of the concept (van Aken et al., 1994). Nevertheless, measures of perceived support tend to show a stronger relationship with health outcomes than do other operationalizations of support (Cauce et al., 1994; van Aken et al., 1994; Wolchic et al., 1989). In the context of research on adolescent coping and health, this tends to indicate the favourability of a 'perceived support' definition of school-related social support.

### **Structural aspects of social support at school**

Research on adults suggests that support appraisals may be structured according to their *type*: e.g. emotional, tangible and informational support. Studies on the structure of child and adolescent social support have largely failed to reproduce this distinction (Cauce et al., 1994; Dubow and Ullman, 1989). For children and adolescents the distinction between *sources* of support may be of structural importance, with support appraisals being structured according to informal and formal support systems (Cauce et al., 1982). Social support at school could involve both these systems, teachers and staff being 'formal' and classmates being 'informal'. A 'systems approach' to support is compatible with the recent developments within stressor-resource matching theory (Gore and Aseltine, 1995) with different systems being relevant for different kind of demands.

These findings suggest that measures of perceived support at school should have some reference to the source of support, and that the items of the measure should be structured according to the source systems. Thus, convergent validity for the Teacher and Classmate Support Scale to be described here will be indicated by significant relationships with other independent source-specific measures.

### **Functional aspects of social support at school**

Several theoretical formulations (e.g. Stressor Resource-Matching theory, Cohen, 1992; Gore and Aseltine, 1995; Demand-Control-Support theory, Johnson and Hall, 1988; Karasek and Theorell, 1990) hold that perceived social support is related to coping and health outcomes. In the vast

literature on work-environment and health, high social support from fellow workers has been associated with higher job motivation and job satisfaction, as well as lower levels of health complaints (for an overview see Fletcher, 1991). Drawing on the work-environment perspective, support from teachers and classmates is theoretically linked to level of school motivation and subjective health. Thus, for the scale studied in this article, criterion validity will be indicated by significant associations with measures on these concepts.

### **Stability of social support at school**

As indicated by the simulations done by Heitzman and Kaplan (1988) measures with low test-retest reliability fail to detect substantial relationships between support and indices of health, which makes the stability of measurement an important issue.

Stability is related to how support is conceptualized. According to the attachment perspective of Sarason and colleagues (1983), perception of support is partly influenced by stable personal characteristics. Support measures derived from this perspective have shown stability over time (Sarason et al., 1986). For other conceptualizations of support, trait-like stability is not assumed. Thus, for long test-retest intervals, low stability is not necessarily evidence of poor reliability. As noted by Wolchic and colleagues (1989), some crosstime variability of support measures could be expected simply due to the fact that social relationships are not stable phenomena. The variability due to inherent instability and the variability due to measurement error, could be separated by applying relatively short intervals between test and retest. Under short intervals the influence of inherent instability would be minimized.

Apart from inherent variability of the measured construct, item-characteristics may also lead to test-retest variability. Attitude research indicates that items referring to information of low accessibility and high complexity increase the risk of random responses, which in turn leads to lower test-retest stability (Otter et al., 1995; Tourangeau and Rasinski, 1988). Items on perceived social support tend to refer to rather abstract and complex evaluations of support (i.e. appraisals), which according to the information processing account of response selection will be likely to increase random response patterns and lower test-retest stability (Otter et al., 1995).

### **The Teacher and Classmate Support scale**

A 'perceived support' operationalization as delineated earlier, served as the background for the Teacher and Classmate Support scale. Further, in keeping with Cauce's notion of 'support systems', all items refer to the

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source of support. As shown in Table 1, the scale comprises a classmate and a teacher subscale, each containing 4 items.

Some of the items originate from a classroom climate questionnaire that was in part developed and used in the context of a large scale project on bully/victim problems in school (Manger and Olweus, 1994; Olweus, 1994). The items had been used in previous research, and were part of ongoing longitudinal studies. All the items of the classmate subscale have a five-point Likert scale 'always' to 'never', whereas the teacher items have a five-point agreement scale 'Strongly agree' to 'Strongly disagree'.

**Table 1** *The Teacher and Classmate Support Scale*

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*Teacher support*

- V1 Our teachers treat us fairly
- V2 When I need extra help, I can get it
- V3 My teachers are interested in me as a person
- V4 Our teachers are nice and friendly

*Classmate support*

- V5 The students in my class enjoy being together
  - V6 Most of the students in my class are kind and helpful
  - V7 Other students accept me as I am
  - V8 When a classmate is upset, other students comfort him/her
- 

## **The present study**

The present study examines the factorial structure, the test–retest reliability and the validity of the Teacher and Classmate Support scale.

## **Method**

### *Sample*

A convenience sample, consisting of 315 students from classes in grade 7 (13-year-olds) and 366 students from classes in grade 9 (15-year-olds), participated in the study. These students belong to seven of the 10 Norwegian schools participating in the European Network of Health Promoting Schools. For the retest study, a subsample of 57 students from two classes in grade 7, and 51 students from two classes in grade 9 participated.

*Materials*

The Teacher and Classmate Support scale were administered as part of a large survey that covered three main topics: a) health behaviour and health perception; b) perception of school-environment and c) self-image and social network. Validation criteria were as follows:

*HBSC-Symptom Checklist (HBSC-SCL).* This is a scale where the respondents are to report the frequency of different symptoms (headache, stomach-ache, back pain, insomnia, dizziness, sadness, nervousness) on a 5-point Likert scale from 'daily' to 'seldom or never'. The scale has shown adequate internal consistency (Cronbach's alpha: 13-year-olds = 0.81; 15-year-olds = 0.74). Scales with a similar outline have proven to be highly reliable for adolescent populations (e.g. 'Children psychosomatic symptom checklist', Wisniewski et al., 1988).

*Negative/positive school motivation scale (Manger and Olweus, 1994; Olweus, 1994).* This a measure of motivation to attend school. The scale has been used in large studies on bullying (Manger and Olweus, 1994; Olweus, 1994). Subjects are to report the frequency with which they experience a set of different motivational states (e.g. 'wish to stay home in the morning'; 'lessons are tedious'; 'wish to quit school') on a Likert scale from 'very often' to 'never'. (Cronbach's alpha: 13-year-olds = 0.83, 15-year-olds = 0.82).

*The HBSC Perceived Availability of Support Scale (HBSC-PASS, Wold et al., 1994).* This is a scale where subjects report their perceived access to support from different providers if a problem occurs. The item stem is: 'How easy is it for you to talk to the following persons about things that really bother you?' (Mother/ father/elder siblings/friends/teachers/school nurse). Responses are rated on 4-point Likert scale: 'Very easy', 'Easy', 'Difficult', 'Very difficult'. The design and content of the scale items resemble the 'guidance' component of the extensively validated Social Provisions Scale (Cutrona, 1989). In a sample of Norwegian adolescents the validity of the HBSC-PASS have been indicated through adequate relationships with loneliness and subjective health complaints (Hopland et al., 1993). In the present study, one item on teacher support, and a composite measure of two items on friend support were selected as validation criteria.

*School-class Network (Torsheim et al., 1997).* This was measured by one item: 'How many good friends of yours are there in your school-class?' The item has shown high test-retest reliability (Pearson- $r$  = 0.83) in a sample of Norwegian adolescents (Torsheim et al., 1997).

*Procedure*

The study was carried out at the end of November and beginning of December 1994. The test-questionnaire was administered during an ordinary class-hour to those students who were present. The students were instructed by the teacher in how to fill out the questionnaire, and were informed that their participation was voluntary. Students were not informed about the forthcoming retest. The retest questionnaire was administered 7 to 10 days later to a subset of the original sample. The administration of the retest followed the same procedure as the test.

*Statistical analyses*

*Confirmatory factor analysis.* A confirmatory factor analysis (CFA), using the framework of Bentler and Weeks (1979), was performed to investigate the internal validity of dividing the scale items into a classmate and teacher support subscale. When a theoretically founded measurement model exists, CFA offers several advantages compared to ordinary exploratory factor analysis. Using CFA, one can test the goodness of fit of a priori hypotheses about the structure of the measure. CFA also offers more sophistication in detecting violation of the a priori assumptions, and in detecting group differences.

Several indices of goodness of fit exist. In the present study, the Comparative Fit Index (CFI) was used as the goodness of fit criterion, as this estimate is unaffected by sample size. The CFI ranges from 0 to 1. By convention, a value greater than 0.9 indicates a model with acceptable fit to the data. Aikikes Information Criterion (AIC) was estimated for comparison of non-nested models. For nested models, test of differences was made by testing the significance of the difference in chi-square.

Three models were tested: M1) a one-factor model; M2) an independent two-factor model; and M3) a correlated two-factor model. M1 implicates that a single factor accounts for the covariance between the 8 items. M2 and M3 are in accord with the a priori division into a classmate and a teacher subscale, but only M3 allows these support sources to correlate. As suggested by Byrne (1994), optimal baseline models were obtained for each sample separately, and then subjected to tests of invariance across samples. The test of invariant factor structure is done by imposing constraints of equality between samples for the same model. If the constraints of equality do not fit the data, these constraints will reduce the goodness of fit of the model compared to an unconstrained model.

*Test-retest reliability.* As no single agreed-upon estimate of test-retest reliability exists, both Pearson- $r$  and Intra-class correlations (ICC) were computed. Pearson- $r$  is a measure of correlation, but correlation does not imply stability. Several authors have advocated the use of ICC (Shrout

and Fleiss, 1979) as a better measure of reliability (Streiner and Norman, 1995; Ottenbacher, 1995). Contrary to the Pearson-*r*, the ICC can in principle be interpreted as a measure of test-retest stability. The ICC were estimated through the use of Model 2 (Shrout and Fleiss, 1979).

*Validity.* External validity was indicated by Pearson-*r* coefficients between the scales and relevant criteria on validity.

*Computation.* Computations for the confirmatory factor analysis was performed with EQS for Windows 5.4, all other computations were done with SPSS 7.0.

## Results

### *Factor structure*

A model summary of the confirmatory factor analysis is shown in Table 2.

The table shows that a one-factor model (M1) fitted the data poorly for both age samples, indicated by a CFI of 0.763 in the sample of 13-year-olds, and 0.624 in the sample of 15-year-olds. This suggests that the covariance between scale items cannot be accounted for by one unidimensional construct. A priori, the scale was considered to measure support from two sources, classmate and teacher support. An independent two-factor model (M2) fitted the data well in the sample of 15-year-olds (CFI = 0.954), but not in the sample of 13-year-olds (CFI = 0.889).

Under the two-factor model (M2), classmate and teacher support are assumed to be independent factors, but from a theoretical point of view it would not be unreasonable to assume a correlation between these two concepts. A model allowing the classmate and teacher support subscales to correlate (M3) fitted the data very well in both samples (13-year-olds: CFI = 0.96; 15-year-olds: CFI = 0.990). Compared to the independent two-factor model, the increment in goodness of fit was significant for both samples (13-year-olds:  $\chi^2 = 56.673$ , d.f. = 1,  $p < .001$ ; 15 year-olds:  $\chi^2 = 29.258$ , d.f. = 1,  $p < .001$ ). The correlated two-factor model combines a high goodness of fit with theoretical coherence and was chosen as the baseline model for tests of invariant factor structure across samples.

The measurement equations of the correlated two-factor model are shown in Table 3.

In the sample of 13-year-olds, factor loadings were rather homogenous within each subscale, the most homogenous being the teacher scale. Cronbach's alpha for the teacher scale was 0.81, and for the classmate scale 0.74. For the 15-year-olds, factor loadings varied from 0.486 to 0.848, suggesting some heterogeneity between items. The correlation between

**Table 2** Model summary of goodness of fit for the one-factor, independent two-factor and correlated two-factor model on the scale structure of the Teacher and Classmate Support scale

Model	$\chi^2$	d.f.	p	Comparison	$\Delta\chi^2$	$\Delta d.f.$	p	Aic	CFI
<i>13-year-olds</i>									
M1. One-factor	193.00	20	<.001		-	-		153.000	0.763
M2. Independent two-factor	101.066	20	<.001		-	-		61.066	0.889
M3. Correlated two-factor	48.393	19	<.001	M3 vs M2	56.673	1	<i>p</i> <.001	10.292	0.960
<i>15-year-olds</i>									
M1. One-factor	313.787	20	<.001		-	-		273.787	0.624
M2. Independent two-factor	56.253	20	<.001		-	-		16.253	0.954
M3. Correlated two-factor	26.995	19	n.s.	M3 vs M2	29.258	1	<i>p</i> <.001	-11.005	0.990

**Table 3** *Measurement equations for the correlated 2-factor model, standardized solution (error terms omitted)*

<i>Measurement equations</i>	<i>13-year-olds</i>	<i>15-year-olds</i>
Our teachers treat us fairly.	V1 = 0.729 F1	V1 = 0.768 F1
When I need extra help, I can get it.	V2 = 0.751 F1	V2 = 0.486 F1
My teachers are interested in me as a person.	V3 = 0.653 F1	V3 = 0.679 F1
Our teachers are nice and friendly.	V4 = 0.788 F1	V4 = 0.816 F1
The students in my class enjoy being together.	V5 = 0.525 F2	V5 = 0.650 F2
Most of the students in my class are kind and helpful.	V6 = 0.690 F2	V6 = 0.848 F2
Other students accept me as I am.	V7 = 0.697 F2	V7 = 0.610 F2
When a classmate is upset, other students comfort him/her.	V8 = 0.697 F2	V8 = 0.563 F2
<i>Correlation between factors</i>		
Teacher (F1) and classmate support (F2)	F1,F2 = 0.518	F1,F2 = 0.349

the classmate and the teacher factor was moderate. Cronbach's alpha for the teacher subscale was 0.77 and for the classmate subscale 0.75.

To test the invariance of factor loadings across samples, the correlated two-factor model was tested with the added constraint that the same factor solution should apply for 13-year-olds and 15-year-olds. A model with these constraints fitted the data well (CFI = 0.952), but compared to the unconstrained model there was a significant decline in goodness of fit ( $\chi^2 = 43.31$ , d.f. = 9,  $p < .001$ ), implying that the general assumption of invariant factor solution across samples did not hold statistically.

#### *Test-retest reliability*

Test-retest stability expressed in terms of correlations and absolute response unit change is shown in Table 4. Due to the low sample-sizes, results are presented for 13-year-olds and 15-year-olds as a whole.

These results indicate that for all items, more than 50 percent of the subjects gave the same response on test and retest. Furthermore, Table 4 reveals that most deviances between test and retest were of the size of one response unit, meaning that shifts primarily occurred between two adjacent response categories. Only a small proportion of subjects changed responses two or more categories from test to retest.

The Pearson- $r$  estimates indicate considerable inter-item differences in stability. A lower level of stability was shown for the item 'The students in my class enjoy being together', but also the item 'My teachers are interested in me as a person' showed a low stability. At the scale level,

**Table 4** Test–retest stability expressed as correlations and frequency of response unit change (percent, n = 108)

Scale / Item	Relative stability		Absolute response unit change			
	ICC	Pearson-r	0	1	2	3+
<i>Perceived teacher support (sumscores)</i>	0.681	0.689				
Our teachers treat us fairly		0.562	57.9	35.5	4.7	1.9
When I need extra help, I can get it		0.662	61.1	31.5	7.4	–
My teachers are interested in me as a person		0.469	49.5	34.6	14.0	1.9
Our teachers are nice and friendly		0.647	61.1	33.3	3.7	1.9
<i>Perceived classmate support (sumscores)</i>	0.732	0.740				
The students in my class enjoy being together		0.448	49.5	46.7	3.7	–
Most of the students in my class are kind and helpful		0.599	61.7	35.5	1.9	0.9
Other students accept me as I am		0.615	63.6	31.8	4.7	–
When a classmate is upset, other students comfort him/her		0.603	57.9	35.5	4.7	1.9

the teacher and the classmate subscales show comparable levels of stability. Test–retest Pearson-*r* was 0.69 for the teacher subscale and 0.74 for the classmate subscale. The differences between Pearson-*r* and ICC estimates of stability were small.

### Validity

Correlations between the subscales and relevant criteria of validity are shown in Table 5. This indicates that both the teacher subscale and the classmate subscale showed moderate correlations with measures of criterion validity.

Both subscales correlated strongest with the School motivation scale, with Pearson-*r* correlations ranging from 0.36 ( $p < .01$ ) to 0.18 ( $p < .05$ ). The correlation with the HBSC symptom checklist was weaker for both subscales, and non-significant for the teacher subscale in the 15-year-old sample.

The teacher and classmate subscale showed the opposite pattern of correlation with independent measures of perceived teacher and peer support. The teacher support subscale correlated strongest with the independent measure of teacher support, and only weakly with the

**Table 5** *Pearson-r correlations of teacher and classmate subscales and criteria on validity*

<i>Validation criteria</i>	<i>13-year-olds</i> n = (280–304)		<i>15-year-olds</i> n = (344–356)	
	<i>Teacher</i>	<i>Classmate</i>	<i>Teacher</i>	<i>Classmate</i>
<i>Criterion validity</i>				
School Motivation Scale (SMS)	0.33**	0.35**	0.36**	0.18*
HBSC Symptom Checklist (HBSC-SCL)	-0.18*	-0.23**	n.s.	-0.13*
<i>Convergent validity</i>				
Available support from friends (HBSC-PASS) items	0.17*	0.33**	n.s.	0.31**
Available support from teacher (HBSC-PASS) item	0.24**	0.13*	0.40**	n.s.
School-class network	n.s.	0.33**	0.17*	0.43**

\*\**p* < .01; \**p* < .05; n.s.: not significant.

independent measure of classmate support. Inversely, the classmate subscale correlated stronger with the independent measure of friend support, but weakly with the independent measure of teacher support. Finally, the Classmate support subscale, but not teacher support, was moderately associated with school-class network (Pearson-*r* = 0.33 among 13-year-olds, and 0.43 among 15-year-olds (*p* < .01 in both samples)).

## **Discussion**

### *Internal validity*

The Teacher and Classmate support scale comprises two subscales that are assumed to measure social support from two separate sources. The results of the confirmatory factor analysis were consistent with the a priori assumption that the scale measures two factors, a teacher and a classmate factor. Theoretically, this is in keeping with previous findings that adolescents clearly distinguish between different sources of support (Cauce et al., 1982; Dubow and Ullman, 1989). Using the terminology offered by Cauce and colleagues (1982), teacher support and classmate support is provided by separate support systems. In both samples, the classmate factor and the teacher factor were moderately to strongly correlated, which is line with findings from other source-specific scales (e.g. Cauce et al., 1994; Dubow and Ullman, 1989). Theoretically, this is

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in keeping with Sarason's attachment perspective (1983), that there will be some consistency in appraisals of support across sources and time. Students who view teachers as supportive, will also be inclined to view classmates as supportive. This could mean that a higher-order factor may account for some of the covariance in the data.

Ideally, a measure should measure the same phenomenon across samples. The confirmatory factor analysis revealed that the assumption of invariant factor solution across samples of 13- and 15-year-olds did not hold statistically, but the differences were marginal. Though statistically significant, the substantive significance of this finding is difficult to interpret. One could argue that these differences reveal subtle developmental changes in the structure of social support, but another explanation would be random error.

*Test-retest reliability*

Consistent with the information-processing account of response selection, it is the items referring to perceptions of concrete helping behaviour that show the higher stability, the most stable being 'When I need help I can get it'. Helping behaviour from the teacher is highly prevalent, which makes perceptions of this kind of support more accessible and less prone to random response patterns. The item 'Teacher accepts me as a person' did not exhibit a high stability. From an information processing point of view this may have to do with the complexity and the ambiguousness of the item. To answer this may involve rather elaborate information-processing, which increases the likelihood of random responses. Similarly, for the classmate support items, the item 'students enjoy being together' shows a lower level of stability. A straightforward explanation could be that the students enjoy being together at one time, but less so at other times. However given the short test-retest interval one would expect some inherent stability. The low stability of this item could also be related to ambiguousness. It may be unclear what is actually meant by 'enjoy being together' and such ambiguousness has been shown to increase random responding (Otter et al., 1995; Torangeau and Rasinski, 1988).

The analysis of the test-retest response unit changes provides useful additional information about the stability of single items. The fact that, for most items, more than 90 percent of the subjects' test-retest responses deviate only by one response category or less suggests a high relative stability. Pearson-*r* correlations indicate moderate stability, but the absolute test-retest changes tend to be small. Moving to the subscale level, the reported stability is comparable to what has been reported in other reviews (Dubow and Ullman, 1989; Heitzman and Kaplan, 1988; Wolchic et al., 1989), with 0.7 as a mode value. This level of stability would not be adequate for selection or diagnostic purposes. However, in

the context of detecting significant change in the supportiveness of groups as a part of program evaluation, or in detecting substantive relationships with health indices, the reported stability would be adequate, as suggested by the simulations performed by Heitzman and Kaplan (1988).

### *Construct validity*

The a priori division into a classmate support and a teacher support subscale was confirmed to be valid, but this is not per se a demonstration of construct validity. Construct validity would be indicated if the subscales correlate with independent measures of theoretically related concepts.

In both samples, the teacher subscale correlated moderately with the independent measure of teacher support, and only weakly with an independent measure of friend support. Inversely, the classmate support subscale correlated moderately with a measure of friend support, and not with the independent measure of emotional teacher support.

This pattern of associations suggests that the two subscales discriminate between friends and teachers as support sources. A plausible explanation for the only moderate associations may be that the classmate and teacher support subscales is more domain-specific than the validation criteria. Classmates only constitute a part of the friend support system, and the functions of classmate support are primarily confined to the domain of school. Consistent with this, classmate support showed the strongest association with number of good friends in class. These findings underscore the need to focus more on the domain-specific aspects of classmate and teacher support. Further validation studies could benefit from using domain-specific measures as validation criteria (e.g. APP, Dubow and Ullman, 1989; Harter's Social Support Scale for Children, Harter, 1985).

### *Criterion validity*

As would be expected, both subscales were positively correlated with school motivation, and negatively correlated with health complaint score.

Focusing on the *magnitude* of relationships, the stronger relationship with school motivation is consistent with the notion that social affiliation has intrinsic rewarding properties (Baumeister and Leary, 1995; Ryan, 1993), and that support from teacher and classmates provide important incentives in motivation to attend school.

For both subscales the association with subjective health complaints was weak. To demonstrate high criterion validity, stronger associations would normally be required. The results are however in line with validation studies of other renowned source-specific support scales. In this line of studies, weak associations between support and indicators of

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distress has been the typical finding (e.g. Cauce et al., 1994; Cutrona, 1989; Vaux et al., 1986). The weak associations found in these studies are also in keeping with the stressor-resource matching perspective on support (Gore and Aseltine, 1995). Classmate and teacher support are coping resources that match stressors within a specific life domain, whereas subjective health complaints may be affected by coping resources in a whole range of other domains as well. From this perspective the overall impact of classmate and teacher support may be limited. Thus, weak associations between specific measures of support and global measures of distress could be expected. These considerations may partly account for the modest associations reported in the present study.

*Limitations*

The non-randomized sampling procedure may be a problem to the generalizability of the results. Some selection bias could occur due to the fact that the students went to schools that had become members of the 'European Network of Health Promoting Schools'. These schools may be atypical, and more resourceful than the average school. This may have affected the average level of scores on the different study variables. In principle, quantitative biases in the level of scores on the variables may also result in qualitatively biased relationships between the variables (e.g. 'ceiling' effects). This potential flaw should be weighted against the fact that the results went in the expected direction and further, that baseline comparisons with a representative sample of Norwegian adolescents on a number of key variables revealed no significant differences in means.

**Overall conclusion**

The structure of the Classmate and Teacher support Scale is theoretically sound and in line with previous studies. Overall, the validation findings give preliminary indications that the scale measures a domain specific kind of support. Thus, the scale may be of greatest utility in research on adaptational outcomes within the school setting, and less useful in research on global adaptation and distress. At the present stage of development the scale offers promise as a parsimonious self-report measure on classmate and teacher support. Only further studies will reveal whether the scale can be recommended for wider research purposes.

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