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Norwegian Nursing College teachers' situation

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Abstract:

The aim of this study is (1) to identify the most prominent stressor among teachers, and (2) to examine the stress level in three samples of teachers: Nursing teachers, primary school teachers and preparatory college teachers.

Stress is measured using Cooper Stress Inventory with reference to (1) the global stress level, (2) a three-factorial model and (3) single items. The three-factorial model is based on principal component analysis (N=278) and in-depth qualitative interviews (N=14).

Time-pressure and relations between work and private-life play a prominent part in perception of stress in all teacher groups. The global stress level is considerably higher in nursing teachers compared to the other teachers groups. The first factor (communication and relations) is especially elevated in the nursing teacher group. The most plausible explanation to this finding is that there actually is a heavier workload within the nursing colleges than in the other types of teaching arenas. It is further reason to expect that the demands for preparation and professional skills are higher in college than in the other educational groups.

Lacking a common understanding and definition of the stress concept hinders a meaningful discussion of whether stress levels are high for the group of employees or for teachers in general.

Introduction:

In the present article our aim is twofold: The first objective is to determine what is the most prominent aspect of stress in teachers in general, and within each teacher groups. This is accomplished by simply comparing the stress-level in single items or within the three-factorial model. The second aim is to compare stress levels between several professions in order to shed light on how stressful nursing teachers' professional situation is in relation to that of other professions.

According to (1), the theoretical and empirical literature reveals that research in the field of job-related stress among various professions suffers from a lack of consensus in several areas. One has attempted to compare various profession's subjective job stress level without considering the validity of the stress concept in the groups. Studies which compare stress levels across professions seem to be motivated by at least one of the three perspectives: Some groups are typically exotic, like air controllers (2, 3, 4), submarines (5), space travel (6) and this alone seem to legitimize stress level studies of these groups. In addition, some professions have taken the initiative to study stress levels with labor union's political agendas in mind, for example teachers' conditions studies, (7), and physicians' conditions studies(8).

Although research on teacher stress has proven to be a cross-cultural phenomenon, the literature gives no clear indication as to whether teachers report higher stress levels than other professions. According to (9) there has been enormous transitions taking place in teaching environments over short time, and teachers from various countries report job-related stress. Teachers are reported as being stressed by the workload, the behavior of the pupils, lack of promotion prospects, unsatisfactory working conditions, poor relationships with colleagues, pupils and administrators and a host of other problems. Stress is among the most important causes of sick leaves, and primary teachers report a higher incidence of stress, muscle ailments, and burn-out syndrome than for example, hospital employees (10).

There is no consensus in the literature as to identify the most prominent stressor. In the following we will address this issue by classifying the contributions according to our three-factorial model. (compare study 1).

1. Communication, collaboration: Harri, M., 1993(11) identified many administrative duties, poor communication with superiors, along with the feeling of being undervalued as the most important stressors among Finnish nurses.

2. Time pressures and its relation to private life: Studies carried out in other countries suggest that there are various recurring problems in the professional field of higher education. The most important stressors mentioned are pressured time schedules, heavy workloads, and interpersonal relations at the workplace (12). In a qualitative and quantitative study carried out by (13) many teachers in the field of higher education already then reported experiencing excessive workload and that this was seen as an important source of dissatisfaction. Nursing teachers in England and Wales reported pressure at work, insufficient preparation time, poor salary and low status as strenuous and therefore dissatisfying aspects of their job (14). Langemo, D., 1988(15) reported from their study among 208 baccalaureate nurse educators from four Midwest states that they on average worked 57.5 hours per week. Hunter, P., Houghton, D., 1993(16) claim that nursing teachers felt they had too little time to perform their duties, and that the majority of these felt they had minimal influence and opportunity for job autonomy. Forty-three percent of Norwegian nursing teachers experienced their workload as too heavy (1). In a study carried out in USA among teachers at 80 institutions of higher education 60 percent reported overall stress in their lives as stemming from their work situation, and the majority of the 10 top stressors related directly to time and/or resource constraints (17).

3. Esteem, positional frustrations: Experiencing the lack of job autonomy has (also) been identified as the most stress inducing factors among nurse educators (Lambert, C., et al., 1993). Clinical nursing teachers in United Kingdom were more likely to mention inadequate recognition of their work, poor promotional prospects and lack of participation in educational decisions. The most serious stressor identified by Israeli faculty was the lack of time to update them professionally, making it difficult to keep abreast with current developments in their field. American faculty ranked this as the third most important source of stress (18).

This review shows that previous research has failed to provide unambiguous answers as to what the greatest and most influential stressors among teachers in general and nursing teachers in particular are. Moreover, new factors are constantly being promoted; as if each researcher “discovers” ever-new problems as being the greatest and most influential, and many researchers introduce new concepts in the process. There is, nonetheless, a predominance of contributors who have emphasized stressors related to strained time schedules.

Further, this review demonstrates that a good deal of the literature focuses on isolated items, details, and specific questions, seldom using conceptually generalized categories (in other words without regard for common factors and conceptual constructs).

The second aim of this study is to identify differences in stress level between different teacher groups. This question is, to our knowledge, not addressed in literature. And regarding nursing teachers, there are few studies published.

Method

Introduction to the comparative approach

This is the second part in a three-step comparative approach. The first step is to evaluate the validity of stress-concepts in different occupational groups (article 1.). The second (and present) step is to compare stress-levels within and between occupational groups. Essential to this approach is the presumption that a common conceptual framework must be identified prior to comparison of stress-levels (step 2) and studies of reasons for (as well as consequences of) stress (step 3).

Data and samples, procedures for data collection

The professions which served as point of departure for our study were nurse educators (N=278), primary school teachers (N=2786), preparatory college teachers (N=226), and employees in industry (N=197), restaurant (N=83), hospital (N=460), institutions (N=255) and in hotels (N=440). Data collection took place from 1986 to 1997 using a questionnaire in conjunction with charting of work environments. Except nursing teachers, the present analysis is a secondary application of the data. The questionnaires were distributed to nursing teachers by mail to all of the Norwegian nursing colleges, and the response rate was 38%. Data from primary school teachers was collected in conjunction with the teachers' labor unions (NL) Teachers Conditions Investigation in 1997. All together 3000 teachers were approached by mail as to whether they desired to participate in the investigation. Teachers who had reservations or who didn't respond were replaced by new. With responses from 2,786 the response rate was 93%. This charting from preparatory college was carried out in conjunction with a series of work environment chartings underway at various schools. These chartings were taking place at the initiative of the individual school, thereby making the sample of schools a nonrandom sample. The exact response rate for these samples is unknown, but high. As for the remaining professions (hotel, restaurant, health care institutions, and hospital employees) their working conditions were charted as part of ongoing intervention studies and work conditions investigations being carried out independently at the employer's own initiative. Response rates vary, but are consistently high in these samples.

Instruments

The Cooper Job Stress Questionnaire was designed by Cooper in 1981(19), to assess stress at work. The questionnaire consists of 22 items, and the response format is 0 to 5. High score indicates high stress at work.

Statistics

Principal component analysis with orthogonal rotation was used to evaluate the empirical validity of the stress concept in different occupational groups. Cronbach's Alpha was used to assess the internal consistency in sum-scores. Comparison of stress-level within and between occupational groups was done using means with 95 and 99 percent confidence intervals (95 and 99% CI).

To go thoroughly into the empirical basis for the three-factor model, 14 in-depth qualitative interviews were conducted among nursing teachers. The quantitative data sources are to be used for the purpose of illuminating which stressor nursing teachers experience as most influential, and whether nursing teachers experience more stress than other professions. The qualitative data sources serve to provide more in-depth information to the quantitative results, and point to examples of stressors that have quantitative significance. The qualitative data sources are used only secondarily, and will be presented in the discussion section.

Results

The result section is divided in two; first the scales of internal consistency is assessed using Cronbach's Alpha. Next, stress levels across professions are compared – based on the nursing teacher sample – by comparing the average score for the entire Cooper stress scale globally, applying the three- factor structure and finally through reference to each of the questions.

The first article in the comparative series used factor analysis in order to identify a framework for the stress-concept with common validity in different occupational groups. From this, the empirical foundation was established for comparing stress levels based on these factors. The study demonstrated the existence of a three-factor model with empirical validity in nursing teachers, primary school teachers and preparatory college teachers. Other groups (i.e. employees in hotels, industry and hospital) had other empirical structures in the stress-concept. From this we can conclude that groups of employees with similar tasks and terms of employment share similar factor structures.

We called first factor “Communication and collaboration”, which included questions about communicative relations at work, ideal conflicts, leaders' understanding of problems, and relations to management and colleagues. The second factor “Time pressure and private life” included topics of balancing demands in work with private demands, include questions about subjective time pressures, excessive workload, and the relationship between work and domestic spheres. The third factor “Positional frustrations” covered topics concerning the teachers position in the organization. The factor included questions about recognition, collaboration, and the experience of power and influence in one's work situation. Further, the fear of making mistakes, promotional opportunities, fear of becoming redundant, conflicts between professions (groups of employees), leading others, salary, and relations with pupils and students. Results from the three teacher groups are shown in table 1 in article 1.

Alpha scores are high in all of the samples, indicating adequate internal consistency among the 21 questions within each of the professions. We can summarize, given certain reservations (see discussion section) that the Cooper stress questionnaire can be used as a reliable global measure with high internal consistency across greatly diverse categories of professions.

Table 1. Cronbach's alfa of global Cooper stress scale in groups of employees

Groups of employees	Alpha
Hotel	,9022
Institution	,8941
Primary school	,8810
Nurse education	,8752
Preparatory college	,8998
Industry	,9059
Restaurant	,8874
Hospital	,8896
Average for all samples	,8919

The internal consistency is high within each factor for all three professions. The third factor for nursing teachers and primary school teachers, is however somewhat low, which may be explained by this factor's inclusion of many separate items with reference to somewhat different problems. Low alpha scores (as in the third factor) lead to lower internal consistency between the responses to questions comprising the factor, requiring a more thorough individual examination of these items.

Table 2. Chronbach's alfa within in three educational professions

Factor	Items	Factor name	Questions	Cronbach's Alpha		
				Teachers in nurse education (N=278)	Primary school teachers (N=2786)	Teachers in Preparatory College (N=226)
1	1, 2, 18, 19, 20, 22	Communication and relations	Relation to leaders; Relation to colleagues; Ideal-conflicts; Communications; Uncertainty while working; Leaders don't understand problems.	,8000	,8360	,8286
2	4, 7, 10, 11, 14	Time-pressure and private-life	Workload; Time-pressure and deadlines; Relation work – private life; Partners attitude to my work; To bring work home.	,8500	,8306	,8414
3	3, 5, 6, 8, 9, 13, 15, 16, 17, 21	Positional frustrations	Relations to student/pupil; To do mistakes; To feel undervalued; Possibilities and promotions; Salary; Removal by downsizing; To lead other workers; Firms plans for development; Power and influence; Conflicts between workgroups.	,6863	,6676	,7669

As we do not find a conceptional framework in the stress-concept common in all occupational groups, we can only compare average global stress levels between all eight professions. Table 3 shows that global stress levels are considerably higher for nursing teachers than for all of the other groups. Stress levels for primary and secondary school teachers are also somewhat higher than for the other professions, and this difference is significant (with reference to 99 percent confidence intervals).

Table 3. Global stress level in 8 groups of employees

	Nurse education	Primary school	Preparatory College	Hotel	Institution	Industry	Restaurant	Hospital
Mean	2,04	1,50	1,42	1,11	1,28	1,24	1,03	1,25
99% CI low	1,93	1,46	1,28	1,02	1,15	1,10	,82	1,16
99% CI high	2,15	1,54	1,56	1,20	1,41	1,38	,25	1,34
S.D.	,73	,78	,81	,72	,81	,76	,74	,74
N	278	2786	226	440	255	197	83	460

Table 4 shows average stress loads for teachers at nursing colleges, and in primary school and preparatory college. Nursing teachers report higher stress levels than teachers in primary school and preparatory college in all of the three factors.

Table 4. Factorial stress level in three teaching professions

	Nurse education			Primary school			Preparatory College		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Mean	2,14	2,61	1,69	1,42	2,18	1,20	1,46	1,88	1,16
99% CI low	1,99	2,45	1,57	1,37	2,12	1,16	1,28	1,68	1,03
99% CI high	2,29	2,77	1,82	1,48	2,23	1,24	1,65	2,08	1,29
S.D.	,98	1,03	,79	1,09	1,12	,77	1,05	1,15	,76
N	278	278	278	2786	2786	2786	226	226	226

Time pressure, heavy workloads, and taking work home in factor 2 are reported as the most important stress factors with regard to factor 2 for the nursing teachers. The same tendency we also find among the other three educational groups. In factor 1.(tab.5) we find that the three educational groups experience the highest stress levels in relation to communication. Further we note in factor 3 that the educational group experience considerable stress associated with plans for development. Nursing teachers also experience considerable stress associated with making eventual mistakes, and feeling undervalued. There is a clear distinction between nursing teachers and the other two teacher categories in their reporting of stress associated with the contrast between their own and the schools ideals. (factor 1), spouses attitude toward work (factor 2), feeling undervalued, stress in conjunction with interdepartmental moves, and promotional opportunities (tab.5)

Table 5. Item stress level in three educational groups

	Nurse education			Primary school			Preparatory College		
	Mean	95% CI	S.D.	Mean	95% CI	S.D.	Mean	95% CI	S.D.
Factor 1: Communications and relations									
19. Communications	2,76	[2,60; 2,92]	1,36	1,87	[1,81; 1,92]	1,54	2,14	[1,92; 2,35]	1,63
20. Uncertainty while working	2,58	[2,41; 2,75]	1,43	1,44	[1,39; 1,49]	1,46	1,51	[1,33; 1,69]	1,40
18. Ideal-conflicts	2,09	[1,92; 2,25]	1,42	1,37	[1,32; 1,43]	1,43	1,12	[,94; 1,30]	1,35
1. Relation to leaders	1,92	[1,76; 2,09]	1,43	1,34	[1,28; 1,39]	1,54	1,75	[1,54; 1,97]	1,63
22. Leaders don't understand	1,81	[1,64; 1,98]	1,44	1,32	[1,26; 1,38]	1,56	1,31	[1,12; 1,49]	1,43
2. Relation to colleagues	1,68	[1,54; 1,82]	1,18	1,20	[1,15; 1,25]	1,25	,96	[,81; 1,11]	1,12
Factor 2: Time-pressure and private-life									
7. Time-pressure and deadlines	3,35	[3,21; 3,50]	1,22	2,65	[2,59; 2,71]	1,52	2,45	[2,25; 2,65]	1,52
4. Work-load	3,26	[3,11; 3,41]	1,28	2,93	[2,88; 2,99]	1,48	2,54	[2,34; 2,73]	1,47
14. To bring work home	2,71	[2,55; 2,86]	1,35	2,26	[2,20; 2,32]	1,63	2,11	[1,89; 2,32]	1,65
10. Relation work – private life	2,48	[2,32; 2,65]	1,41	2,27	[2,21; 2,33]	1,60	1,62	[1,42; 1,82]	1,53
11. Partners attitude to my work	1,24	[1,08; 1,40]	1,35	,78	[,73; ,83]	1,26	,68	[,53; ,83]	1,15
Factor 3: Positional frustrations work evaluation, career outlook.									
16. Plans for development	2,55	[2,38; 2,71]	1,42	1,89	[1,83; 1,95]	1,61	1,79	[1,58; 2,00]	1,61
15. Making mistakes	2,38	[2,22; 2,55]	1,38	1,40	[1,35; 1,45]	1,33	1,63	[1,47; 1,78]	1,19
6. Feeling undervalued	2,29	[2,11; 2,47]	1,55	1,19	[1,14; 1,24]	1,44	1,22	[1,04; 1,40]	1,39
17. Power and influence	1,76	[1,60; 1,92]	1,37	1,06	[1,01; 1,11]	1,38	1,23	[1,04; 1,42]	1,44
9. Salary	1,74	[1,56; 1,92]	1,51	1,77	[1,70; 1,83]	1,76	1,68	[1,46; 1,90]	1,69
15. To lead other workers	1,60	[1,46; 1,74]	1,20	1,21	[1,16; 1,26]	1,34	1,02	[,87; ,17]	1,14
13. Removal by downsizing	1,46	[1,26; 1,67]	1,73	,60	[,55; ,65]	1,34	,48	[,33; ,63]	1,16
21. Conflicts between workgroups	1,13	[,98; 1,28]	1,29	,69	[,64; ,73]	1,16	1,12	[,94; ,29]	1,36
8. Possibilities and promotions	1,10	[,95; 1,24]	1,23	,43	[,39; ,46]	,99	,66	[,51; ,81]	1,14
3. Relation to student/pupil	,94	[,82; 1,06]	1,03	1,78	[1,73; 1,84]	1,43	,77	[,62; ,92]	1,14

Discussion

We see from table 4 that nursing teachers experience the highest stress levels of all teacher groups, and that pertains to all of the three factors. The most plausible explanation to this finding is that there actually is a heavier workload within the nursing colleges than in the other types of teaching arenas. It is further reason to expect that the demands for preparation and professional skills are higher in college than in the other educational groups. For all the groups the greatest stress factors are associated with time pressure, workloads and the work-home sphere. The respondents who make up the primary school and nursing teacher samples are randomly chosen from their respective populations, while preparatory college teacher samples are taken from schools who have independently taken the initiative to do so. Stress levels may have been heightened by the motivation required to do the charting, which may lead to underestimating the differences in stress levels between nursing and secondary school teachers. We see from table 5 that the highest stressors within the teachers groups are related to workload and to bring work home. This is understandable, considering the amount of time teachers in periods spend at home doing preparatory work. Here we do not have any opportunity to compare our findings with previous research. Lacking a common understanding and definition hinders a meaningful discussion of whether stress levels are high for this particular group of employees or for teachers in general. A sense of meaning results from being able to make comparisons with other studies/professions.

One explanation can be: 1).Sorting out the empirical contributions in the literature is difficult. This is a symptom of the conceptual confusion existing within stress research (article 1). Different instruments are applied, grouping varies, groups are given different designations,

making it thereby impossible to hopelessly to compare or classify studies and results. A most important stressor may not even exist, but without a common operational basis we can't count on identifying one, if it does indeed exist. An example of an operational problem: Scales of importance may differ. Stress is measured by intensity, frequency, consequences, in addition to more vague measures such as agree/disagree, etc. 2). The various stressors may be intertwined in a complicated causal pattern. Time pressure and scant resources in general may lead to collaboration problems, which in turn may cause ideological conflicts. In such a case it would be absurd to attempt pointing to a most important stressor. 3). One may also argue that determining the most important stressor will always be closely dependent upon the context. Identification of a most important stressors validity will then be limited beyond its given context. Many of the studies mentioned in our review of literature are carried out with relatively small samples. Should there by chance be a poor leader in a given sample, this would have a major impact on what's reported as being the most important stressor. If by chance an individual from a particular (restricted) population is chosen, then one has failed to randomize conditions. The same would apply to studies initiated by a given problem, where data collection is part of a consultant assignment. This may be the case in a considerable number of small studies.

A second explanation may lie in how the scientific communities norms and rules apply explicit demands and expectations on their constituents. The scientific community lays down the rules of play in accordance with its paradigm, which in turn, governs research. According to (20), it is the paradigm which determines the prerequisites for model formation leading to avenues of inquiry and hypotheses being set forth and the global research that is done globally within the field, a disciplinary matrix. Breaching these terms leads to aversive sanctions. So the work within the confines of any given paradigm will, according to (20) result in minimal criticism of the correctness of hypotheses and theories. A tradition develops and there are few who challenge it. "Truths" are sought to be affirmed rather than disproved

Knardahl, S.,2000, (21, p.269) claims that respondents to questionnaires used in work conditions studies appear to have been totally unknowing about validity and reliability demands. Single questions, often having several meanings and segments within the same question are not uncommon. There are few discussions concerning the extent to which items/questions represent one or more dimensions (compare our threefactor model). Want of a common standard will result in a divergence in the results that various studies provide. It may therefore be ineffectual to proceed with argumentation for identifying a most important stressor. Knardahl, S. (21) asks the question, and our answer is that (1)one ought to aspire towards a common conceptual framework across occupations, and we have (2) proposed a conceptual framework common for teachers at different levels.

Our contribution/solution.

We are aware that we are subject to the measurement anarchy within a given paradigm and thereby the result of a predominating tradition we cannot separate ourselves from. In our proposal of what we determine to most important we use one of several available arguments. Still we hope that we don't repeat the mistakes of others. Our solution is that by applying factor analysis we have improved the conceptual discipline, allowing us to gather things better. Article. 1 shows the existence of a threefold empirical structure in the stressors nursing teachers experience, which they also share with teachers from primary and secondary schools. Had we not performed factor analysis within all the eight categories, we would have been able

to construct a conceptual framework across these, and compared entities without shared validity. Since we have omitted this, we have also avoided repeating others' mistakes.

A description of stress level must refer to a relevant reference category. How do stress levels among nursing teachers compare with those of other teachers and nurses? To arrive at a valid answer concerning the most important stressor, requires that various contributors align themselves according to a common conceptual platform, and thereby share a standard for the concept. We claim that we have achieved this by grouping the stressors in factor scores (art.1).

Discussion relating to reliability:

Through the use of factor analysis (art.1) the underlying structures, similarities, and dissimilarities between professions are identified. Professions with comparable work assignments and contexts share more conceptually similar factors. Of the 8 professions we've identified 3 of which have clear structural similarities (nursing, primary, and preparatory college teachers). The other professions mentioned in tab.3 have different structures and are therefore incomparable. This discipline of revealing underlying structures and similarities represents the uniqueness of our approach, and makes comparison of levels between groups possible.

Tab. 1 and 2 show high Alpha scores. One may be critical to what these high Alpha scores actually mean and to internal consistency as a measure of reliability. It's easier to achieve internal consistency when measuring a narrow aspect of a phenomenon. If this is the case in our study, using Cronbach's Alpha could lend a sense of false legitimacy to our measure. If the breadth of the stress concept (for example, time pressure and work load) is greater than the breadth of the components covered by the Cooper stress factor, an objection as to the narrowness of the operationalization may be raised. This threatens validity. The validity of the operationalization may be evaluated through an unstructured interview. The informant is given a factor title as a cue, whereupon he or she is asked to fill it with content. When the associations often include components outside of the parameters of the operationalization of the measurement instrument, one may assume that the instrument is too narrow and thereby invalid. Paradoxically, the Cronbach's Alpha, which measures internal consistency, will show higher scores the more narrow the parameters of the stress component being charted are. Reliability (internal consistency) is a necessary but in itself insufficient prerequisite for validity.

This entire relation may be laid flat through a critical objection based on a conceptual apparatus stolen from Platon's world of ideas. The attempt we make at drawing up lines of distinction for a concept exists merely as an idea; "the golden standard" is unobservable. We attempt to approach a concept empirically which we, in reality, don't know exists. The concept is a social or cultural construction which the research community has accepted as a stress measure.

Our claim is that application of the Cooper stress battery, collectively and the splitting into the three factors, is both reliable and valid. We've already assured internal consistency, so the critical question is whether or not the scale is valid. The solution lies in reference to the qualitative interviews. If it isn't possible to identify a most important stressor, we believe that we can make it possible by using an interview in order to find out about level results and why

nursing teachers report high stress levels. The qualitative study provides supplemental information for interpretation of the factor analysis for nursing teachers. The following discussion will draw qualitative empiricism and relevant theory together in order to enhance our cognizance of the level results.

FACTOR 1:

The first factor deals with communication and relations, and as previously mentioned, represents the second greatest stress problem for all of the teacher categories.

Nursing teachers report the highest stress levels related to communication, ambiguity, and ideological conflicts associated with their work. This seems somewhat odd considering the large degrees of freedom they report in the interview material, along with the feeling of having their wishes and needs respected and met. *“As a teacher, you have a certain opportunity to influence your work situation, and for professional development.”* Although the majority feel they relate well to administrators and colleagues, work environments are still reported as being characterized by clique-systems, lacking solidarity, jealousy, suspiciousness, and the Jante Law. *“It all falls apart in adversity”*. The same tendencies can be found among Finnish nursing teachers(11). Few respondents report vehement conflicts with administrators, but wish that they were more visible, and took greater interest in their professional development. *“It’s fun to be taken notice of. That’s when I thrive.”*, *“Without feedback, a vacuum arises, and that’s threatening.”* It seems reasonable that a somewhat distant administration along with the Jante Law and lack of solidarity can to a certain extent explain stress related to communication and ambiguity associated with one's work.

Table 5 shows that nursing teachers report higher levels of stress associated with ideological conflicts than other teacher categories. This may be due to the fact that nursing teachers are first socialized into a practical nursing role, and are then required to adapt to a more academic teacher role. Nursing teachers are initially nurses before they adopt a new profession. "Becoming a nurse educator is not an additive process; that is, it's not a matter of adding the role of education to that of a nurse. It requires a change in knowledge, skills, behaviors, and values to prepare for newly assimilated roles, settings, and goals shared by new reference groups"(22, p. 94). The adoption of a second profession, education, by the professional nurse is a major source of internal conflict, particularly for the new faculty member (23, p. 35)

FACTOR 2:

Our review of the literature has shown that one in several studies has come to the conclusion that time pressure and heavy workloads together are a cross-cultural phenomenon. In our study we've also found time pressure and workload, in addition to spouse's attitude to work, to be the most important of the three stress factors for all of the teacher categories. All of the teacher categories have flexible work schedules which entails that they may prepare and do correcting, etc. at home. That is why strains on the work tends to have ramifications for the family sphere.

Previous research for primary schools (24) and from nurse education (1) indicates that excessive workloads at school don't arise due to tasks being too difficult, but rather are due to too much being packed into the schools. Excessive workloads are reported as being more quantitative than qualitative. Table 5 which shows that time pressure and excessive workload

is the biggest stressor, supports the idea of quantitative workloads being more pronounced than the qualitative. The reason for nursing teachers reporting high stress levels may be founded in their actually being subject to heavier workloads than their colleagues in primary and preparatory college schools. Teachers within the healthcare field have traditionally had low levels of formal education. Maybe there is an attempt at compensating for this through increased work efforts. Along with the transition from nursing *school* to nursing *college* in 19 the academic demands placed on staff increased. Demands for higher competency levels in the healthcare colleges has resulted in a multitude of staff running the “honors degree race”. Several of our respondents report having used much of their time off on studying, which can explain the feeling of having a stressful workday. Competence building in the colleges is made possible through the use of substitute teachers and by soliciting the remaining teachers to fill in with extra instruction time on short notice with small chances for proper preparation. Many report this as being stressful. Teachers partaking in advanced studies are periodically on leave, and during the periods when they are at work they are focused on studies and deadlines. *“Despite their being physically present, they seem far away.”*

Most of the nurse educators are women, and "women usually have to juggle full time careers with other roles and commitments such as family responsibilities that may not be required of male professionals in the society" (25, p. 121). Women academicians experience more stress from their job and life than their male colleagues. (18, p. 85)

FACTOR 3:

Positional frustrations is the least stressing factor for all of the teacher categories, but nursing teachers report higher stress levels relating to this factor than the others do. It is the most complex factor, and has somewhat less internal consistency than the others. The single items that make up this factor vary greatly in relation to stress levels. Developmental plans for the school is by far the greatest stress within the factor, something which applies to all three teacher categories.

Teachers in the nursing colleges report higher stress levels related to departmental development plans (firm plans for development), fear of making mistakes, as well as the feeling of being underrated than the other two teacher categories. It may be that these elements can be associated with lower levels of formal education. Field practice and meeting students and colleagues from other departments within the college can easily produce feelings of being underestimated. Underestimation is also reported as a problem among Finnish nursing teachers (12). Several of the teachers in the interview studies touched on this problem area. *«I'm fine today, but not on the day when everyone has lecturer competence»*, implying that one has few choices. Others mentioned that education was important with regard to self esteem and in interaction with students.

Nursing teachers report more stress (than other teacher categories) associated with possible redundancy and promotional opportunities. This may be due to the fact that many nursing teachers are employed in temporary positions in the interim during competency building periods, as fill-ins for teachers in the Honors degree race. Several respondents mentioned this as being unfortunate. Nursing teachers reported higher stress levels associated with fear of making mistakes than primary and high school teachers. It may be possible to explain this due to nursing education being subject specific, and to low competency among teachers.

Stressors associated with salary and student relations are reported as being just as taxing among nursing teachers as among teachers in primary and secondary schools. Nursing educators have their background in nursing, and compare salary with those in clinical practice. It is reasonable to assume that the challenges at the college level are primarily related to the professional field, while being more behavioral in nature at the primary and secondary school levels. Results from the interview study confirm this assumption.

Although many report high stress levels, it seems that teachers derive satisfaction from their jobs. Staff appear to remain stable, and there are few who desire to quit. Through use of the interview we were able to test the operationalization of the stress concept. Our respondents were given a list of factor titles as key word and then asked to provide more in-depth as to their content. No additional elements were revealed outside of those found in the questionnaire. In light of this we find reason to believe that our instrument measures are valid, there being little evidence of a too restrictive measurement tool having been applied.

In spite of reported high stress levels, job satisfaction among nursing teachers is not low. Throughout nursing teachers at the three colleges claim they like their job. Job assignments make a positive challenge to go to work. One has a teacher real opportunities for job autonomy and professional development. "It is exciting to show the way, to lead others along paths of discovery". None of the respondents claimed that they dreaded going to work. Only two doubted as to whether they would continue.

References

1. Stamnes, J., Mykletun, A., Mykletun, R. (1998) Norwegian nursing teachers subjective experience of work overload. A follow-up study. *Vård i Norden*, Vol. 18, No. 1, pp. 4-10.
2. Crump, J. (1979) Review of stress in air traffic control: its measurement and effects. *Aviation, Space, and Environmental Medicine*, Vol. 50, No. 3, pp. 243-248.
3. Maxwell, V., Crump, J., Thorp, J. (1983) The measurement of risk indicators for coronary heart disease in air traffic control officers: a screening study in a healthy population. *Aviation, Space, and Environmental Medicine*, Vol. 54, No. 3., pp. 246-249.
4. Rodahl, K. (1993) *Stress monitoring in the work place*. Boca Raton: Lewis Publishers
5. Sandal, G., Endrsen, I., Vaernes, R., Ursin, H. (1999) Personality and coping strategies during submarine missions. *Military Psychology*, Vol. 11, No. 4, pp. 381-404.
6. Kimzey, S., Johnson, P., Ritzman, S., Mengel, C. (1976) Hematology and immunology studies: The second manned skylab mission. *Aviation, Space, and Environmental Medicine*. Vol. 47, pp. 383-390.
7. Mykletun, R., Lahn, L., Mykletun, A. (1997) *Lærerkår 97*. Bergen: Survey Feedback Research.
8. Aasland, O., Falkum, E. (1994) Legekårsundersøkelsen. *Tidsskrift for Den norske legeforening*, nr. 26, pp. 3052-3058.

9. Travers, C., Cooper, C. (1996) *Stress in the teaching profession*. London: Routledge.
10. Mykletun, R. (1994) Stress, utbrenthet og helse blant lærere. *Schola*, Vol. 5 pp. 5
11. Harri, M. (1993) Mental well-beeing of nurse educators at work. *Scandinavian Journal of Caring Sciences*, Vol. 7, No. 2, pp. 73-77.
12. Brown, R., Bond, S., Krager, L., Krantz, B., Lukin, M. Prentice, D. (1986) Stress on campus. An interactional perspective. *Research in Higher Education*, Vol. 24, No.1 , pp. 97-112.
13. Eckert, R., Stecklein, J. (1961) *Job motivations and satisfactions of college teachers. A study of faculty members in Minnesota Colleges*. Washington: U.S Department of Health, Education and Welfare.
14. Sims, A. (1976) Teachers of nursing in the United Kingdom: some characteristics of teachers and their jobs. *Journal of Advanced Nursing*. Vol. 1, pp. 377- 389.
15. Langemo, D. (1988) Work related stress in baccalaureate nurse educators. *Western Journal of Nursing Research*, Vol. 10, No. 3, pp. 327- 334.
16. Hunter, P., Houghton, D. (1993) Nurse teacher stress in Northern Ireland. *Journal of Advanced Nursing*, Vol. 18, pp. 1315- 1323.
17. Gmelch, W., Lovrich, N., Wilke, P. (1984) Sources of stress in academe: A national perspective. *Research in Higher Education*, Vol. 20, No. 4, pp. 477- 490.
18. Perlberg. A., Keinan, G. (1986) Sources of stress in academe- the Israeli case. *Higher Education*, Vol. 15, pp. 73-88.
19. Cooper, C. (1981) *The stress check*. New York: Prentice- Hall.
20. Kuhn, T. (1962) *The structure of scientific revolutions*. Chicago: Chicago University Press.
21. Knardahl, S. (2000) *Arbeid, stress og helse*. In Skogstad, A., Einarsen, S. (eds) *Det gode arbeidsmiljø. Krav og utfordringer*. Oslo: Universitetsforlaget.
22. Infante, M. (1986) The conflict roles of nurse and nurse educators. *Nursing Outlook*, Vol. 34, No. 2, pp. 94-96.
23. O`Connor, A. (1978) Sources of conflict for faculty members. *Journal of NursingEducation*, V17, No. 5. pp. 35-38.
24. Mykletun, R. (1988) *Teacher stress, personality, work load and health*. Dr. gradsstudie. Bergen : University of Bergen.
25. Dickens, M. (1983) Faculty practice and social support. *Nursing Leadership*, Vol. 6, pp. 121-128.