WORK TECHNOLOGY AND THE MOTIVE PROFILES OF NURSES

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The shortage of registered nurses for hospital work is a serious concern to health care providers, managers and planners (Meltz, 1988; Rachlis & Kushner, 1989). This shortage is related to a variety of factors, including absenteeism and turnover among nurses and the productivity of nurses on the job. There are both tangible (Cascio, 1982; Jones, 1990a, 1990b; Spencer, 1986; Wolf, 1981) and intangible (Mowday, Porter & Steers, 1982; Wolf, 1981) costs associated with both absenteeism and turnover; the reduction of them is thus a key component of planning for nurse staffing in many hospitals. The improvement of job satisfaction among nurses can play a role in the reduction of absenteeism (Bechtold, Szilagyi & Sims, 1980; Price & Mueller, 1986; Redfern, 1978), the reduction of turnover (Bechtold et al., 1980; Cotton & Tuttle, 1986; Curry & Wakefield, 1985; Kosmoski & Calkin, 1986; Moore & Simendinger, 1989; Petty, McGee & Cavender, 1984; Prescott, 1986; Price & Mueller, 1986), and in the improvement of productivity (Bechtold et al., 1980; Petty et al., 1984). There are many factors that influence work satisfaction (MacPhail, 1988; Mottaz, 1988). This paper is a study of one of them, the compatibility of nurses with the work available on the units on which they work.

It is a widely accepted premise of those who study organizational behaviour (eg. Gibson, Ivancevich & Donnelly, 1988) that the outcomes of work (such as productivity, job satisfaction, turnover and absenteeism) depend upon the matching of the worker with the work. For example, if the worker and work are poorly matched with respect to skills, so that the worker does not have the skills necessary to do the job properly, productivity will be low and the worker will probably experience frustration and dissatisfaction with the job. Absenteeism and turnover can result. Workers and work can also be poorly matched with respect to need satisfaction. It can happen that the day to day execution of the work provides no intrinsic satisfaction to the worker, even though the worker is capable of doing the work. In this case also, produc-

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tivity will be low and the worker will be unsatisfied. If the worker and work are well matched in terms of skill and need fulfillment, both productivity and satisfaction will be high and absenteeism and turnover will be low. This principle applies to nursing work. Quality patient care and high nurse satisfaction will be achieved only if individual nurses are placed in work roles that are compatible with their skills and needs. If research is to help administrators make such compatible placements, then it must provide an understanding of the nature of the work that nurses do, the nature of nurses, and the relationship of these to the outcomes associated with nursing work.

One way to characterize the work of nurses is in terms of work technology. Work technology has been defined by Perrow (1967, 1970) as the transformations a worker performs in order to turn work inputs into work outputs. In the hospital unit context, the inputs are clients arriving on the unit for treatment, the outputs are clients leaving the unit after treatment, and the transformations are the treatments applied by the nursing and other staff. According to Perrow, work technology can be arranged along a continuum from routine to non-routine. Work on the non-routine end of the dimension is high on variability (new problems that the worker has to solve appear frequently) and low on analysability (the problems that do appear are not well analysed and require considerable expertise to solve). For example, Leatt and Schneck (1981, 1984) describe work on intensive care units as relatively non-routine. Compared to most other units, intensive care unit patient turnover is high (high variability). In addition, patients sent to intensive care units are usually in unstable condition, so the patients themselves are frequent sources of new problems to be solved, contributing further to high variability. Those patients that do come to intensive care units usually have complicated problems that demand high expertise, in the form of skill and knowledge of specialized equipment and procedures (low analysability). In contrast to non-routine work, routine work is low on variability (new problems that the worker has to solve appear relatively infrequently) and high on analysability (the problems that do appear are relatively well analysed and require less expertise to solve). Leatt and Schneck (1981, 1984) proposed that medical units have more routine work than do intensive care units. On medical units patient turnover is lower and the patients have more stable conditions than on intensive care units (lower variability). On medical units most of the patient problems require less expertise to deal with than they do on intensive care units (higher analysability).

It is important to distinguish the term, work technology, as Perrow uses the term, from technology, as the term is used in everyday language. In ordinary speech, when we use the word technology, we usually mean some piece of hardware, such as monitoring equipment or a personal computer. Perrow uses the term work technology to refer to what the worker does, with or without tools, to the subject of that work. It can happen that very sophisti-

cated technology (in the hardware sense) is used in very routine work (in the work technology sense). For example, data entry is very routine work which uses a very sophisticated piece of hardware, the computer system. A single piece of complex hardware might be part of either routine or non-routine work. For example, data entry clerks use the complex computer for routine work while systems professionals use it for their non-routine work.

It has already been demonstrated, both conceptually and empirically, that the work on different nursing units can be reliably classified along the dimension of work technology. Comstock and Scott (1977) and Leatt and Schneck (1981, 1984) have shown the following order from most non-routine to most routine: intensive care unit, surgical, medical, obstetrics. It can be deduced that emergency and operating room units (which will be the subject of the present study) fall at the non-routine end of this spectrum. Emergency units are probably the most non-routine units. Their designated role is to deal with unexpected clients (high variability) many of whom have complicated problems (low analysability). Emergency unit staff must make diagnoses, often without much information, and sometimes initiate treatment. Operating rooms are probably the next most non-routine. They are more routine than emergency units because most operations are pre-planned. But once operations begin there are may unknowns and often complex medical technology and procedures are in use. Next are intensive care units where clients are sent after immediate crises are over. Taking these speculations into account, and the past empirical studies of Comstock and Scott (1977) and Leatt and Schneck (1981, 1984), a hierarchy for six types of units, running from most non-routine to most routine, is: emergency, operating room, intensive care unit, surgical, medical, obstetrics.

Now that a method of characterizing nursing work has been introduced, a method for characterizing nurses on the basis of their needs or motives (the terms will be used interchangably here) will be described. McClelland (1985) has proposed that the needs for achievement, power and affiliation are especially crucial in the workplace. Stahl (1986) has defined the need for achievement as the need to set and meet moderately challenging goals; the need for power as the need to influence the activities of a number of other people; and the need for affiliation as the need to establish and maintain friendly relationships with a number of other people. McClelland (1985) and Stahl (1986) have shown that a high need for power, in appropriate combination with certain other variables, is correlated with, or predictive of, managerial success (House & Singh, 1987). Chusmir's (1985), Medcof's (1985) and Mowday, Stone and Porter's (1979) models of these motives and occupational suitability have also received empirical support. These studies show that only certain motive profiles are compatible with certain occupations. Some work has been done on these motives among nurses. Chusmir (1985), on the basis of the job description of the general duty nurse given in

the *Dictionary of Occupational Titles* (1977), predicted that nurses would have a motive profile in which the need for affiliation is stronger than the needs for achievement and power, these latter two motives being of equal strength. The logic was that the need for affiliation is the need to establish and maintain friendly relationships with others and nursing work involves a great deal of human interaction. This prediction found empirical support in studies by Medcof and Stahl (1988) and Stahl (1986).

Systems for characterizing nursing work and nurses have been described: it is now appropriate to consider the matching of nurses and their work and some of its consequences. The studies referred to above began with the premise that any particular type of work is capable of satisfying some needs more than others. Given this, there are two kinds of consequences. First, people with a needs profile that is compatible with the kinds of needs fulfilled by the work will be more satisfied with it than those with non-compatible needs profiles. Second, people with a needs profile that is compatible with a particular kind of work will tend to accumulate in that kind of work more than will people with non-compatible profiles. People with non-compatible profiles will tend to move to other work, voluntarily or non-voluntarily, leaving behind those satisfied people with compatible profiles. For example, in nursing the premise was that the work would be more fulfilling of the need for affiliation than of the needs for achievement and power. Given this, nurses with a high need for affiliation would be most satisfied with the profession and would be most likely to stay in the profession. As a consequence, when the needs of a group of practicing nurses are measured, on average, the need for affiliation should be higher than the needs for achievement and power. In the empirical studies referenced above this has been generally been found, although the data have not always strongly supported this line of reasoning.

The accuracy of predictions about nurses' satisfactions and motive profiles might be improved if nursing work were divided into sub-fields based upon work technology. In all of the studies mentioned above, nursing work has been treated as a single occupation with no subfields. This grouping of all nurses together, as if they all did exactly the same kind of work, is artificial. As Comstock and Scott (1977) and Leatt and Schneck (1981, 1984) have shown, the nursing work on different hospital units varies considerably in work technology. It seems reasonable to assume that these differences in work technology between units will lead to different units being able to satisfy different needs. As a consequence, the different units will attract, satisfy and hold nurses with different needs profiles. This proposition is not without precedent. Harrell and Stahl (1984) found that accountants in different parts of the same accounting firm had different motive profiles.

Nursing units at the routine end of the work technology continuum will tend to attract and hold nurses with the needs profile predicted by Chusmir

(1985) and found by Stahl (1986). In that profile the need for affiliation is the strongest need and the needs for achievement and power are equal to each other and weaker than the need for affiliation. On units with relatively routine work technology (eg. medical) the work of nurses is like the traditional description of general duty nursing work given in the *Dictionary of Occupational Titles* (1977) used by Chusmir (1985) to make his predictions. Patients are conscious and not critically ill. Part of the nurse's work is to maintain a respectful, caring and supportive relationship with patients in order to gain their trust and ensure treatment compliance to provide a psychological climate condusive to recovery. This kind of work will probably be more fulfilling of the need for affiliation than of the need for achievement, as Chusmir (1985) and Stahl (1986) suggest.

Nursing units at the non-routine end of the work technology continuum (eg. intensive care units) will tend to attract and hold nurses with a needs profile in which the need for achievement is at least as strong as the need for affiliation and both of these are stronger than the need for power. This prediction of a need for achievement at least as strong as the need for affiliation is based upon three considerations. First, certification to work on non-routine units often involves academic work as well as hands on training and there is a positive correlation between need for achievement and academic achievement (Stahl, 1986). Second, work on non-routine units often involves the understanding and use of sophisticated technical equipment and ideas. Engineers, whose profession also involves a lot of work of this type, are high in the need for achievement (Stahl, 1986). Third, work on non-routine units involves high client turnover, a high rate of unpredicted crises, and relatively complex problems to be solved, all of which are compatible with the need to set and meet challenging goals, which is characteristic of persons with a high need for achievement.

Another effect of the differences in work technology across units will be seen in satisfaction of the need for achievement. The non-routine units exert work demands that those high in the need for achievement will find challenging, stimulating and therefore satisfying. Those low in the need for achievement will not find satisfaction in these kinds of working conditions. On the non-routine units then, there will be a positive correlation between the need for achievement and work satisfaction. On the routine work technology units, though, the correlation between the need for achievement and satisfaction will be negative. Those with low need for achievement will find the level of challenge appropriate and satisfying while those with a high need for achievement will be unsatisfied because of lack of sufficient challenge. In statistical terms, these relationships will be seen as an interaction of work technology and need for achievement upon work satisfaction.

Differences in work technology across units will also affect satisfaction of the need for affiliation. As described above, on units with routine work tech-

nology an important part of the nurse's work is to establish and maintain good social relationships with clients. Nurses with a high need for affiliation will find such work very satisfying while those with a low need for affiliation will find it less satisfying. As a consequence, on routine work technology units, there will be a positive correlation between need for affiliation and satisfaction of the need for affiliation. On non-routine work technology units there will be fewer opportunities to satisfy the need for affiliation. On those units many clients are unconscious or in mental states in which attempts to focus on social relationships are not appropriate. Very often the nurses on such units must be preoccupied with treatment procedures under time pressure and cannot devote attention to social relationships. As a consequence, on non-routine work technology units, nurses with a high need for affiliation will find the work less satisfying than nurses with a low need for affiliation. There will be a negative correlation between need for affiliation and satisfaction. In statistical terms, these relationships will be seen as an interaction of work technology and the need for affiliation upon work satisfaction.

The purpose of this study is to evaluate a number of the ideas presented above. Specifically, the following hypotheses will be tested.

Hypothesis 1. The nursing units to be studied will have the following rank order, running from most non-routine to most routine work technology: emergency, operating room, intensive care unit, surgical, medical, obstetrics.

Hypothesis 2. On units using the most non-routine work technology, the motive profile of the nurses will be:

need for affiliation = need for achievement > need for power.

Hypothesis 3. On the units using the most routine work technology, the motive profile of the nurses will be:

need for affiliation > need for achievement = need for power.

Hypothesis 4. Satisfaction of the need for achievement will be a function of both the routineness of work technology and the strength of the need for achievement. On units with non-routine work technology, there will be a positive correlation between strength of need for achievement and satisfaction of the need for achievement. On routine technology units, there will be a negative correlation between strength of the need for achievement and satisfaction of the need for achievement.

Hypothesis 5. Satisfaction of the need for affiliation will be a function of both the routineness of work technology and the strength of the need for affiliation. On units with non-routine work technology, there will be a negative correlation between strength of the need for affiliation and satisfaction of the need for affiliation. On routine technology units, there will be a posi-

tive correlation between strength of the need for affiliation and satisfaction of the need for affiliation.

Method

Sample and procedure

The sample consisted of 90 registered nurses working on six different nursing units. The average age of the nurses was 35 years and their average years of work experience was 13.1.

The hospital used as the research site is an acute care facility with 354 beds and annual operating budget of $30,175,000.00. It employs 700 people full time, admits 13,800 people per year and has an average patient stay of 6.9 days.

Hospital management sponsored the study, made the official announcement of it and encouraged the nursing staff to participate. The announcement gave prominance to the fact that participation was voluntary and that confidentiality would be preserved. Over a two-day period participants assembled at one-hour intervals, in groups of three to twelve, in a hospital conference room. The time for participation was provided during regular work hours. Any registered nurse working on any of the units for either of the day shifts of the two days of the study was eligible to participate in the study. As announced, during participation the nurses could help themselves to coffee, cookies and other refreshments. These arrangements were provided in order to encourage a high participation rate. When each group of participants had assembled at the stated time, the senior author briefed them on the general nature of the study and some of the benefits that could accrue from it. That participation was voluntary and that confidentiality would be maintained were also reiterated. When each participant had finished the questionnaire he or she would be asked to put it in a large box containing other completed questionnaires which was on a chair beside the senior author. This procedure was adopted to demonstrate concretely that all responses would be kept confidential.

Instruments

Routineness of work technology was measured using questions based upon the instrument used by Leatt and Schneck (1981) for that purpose. The items from the instrument were shown in the appendix to their paper. The time available for respondents to fill out the questionnaire was limited; as such, nine of the 21 questions in the Leatt and Schneck instrument were used. Items numbered 2, 4, 5, 6, 8, 10, 13, 19 and 21 were selected for inclusion by the senior author and the director of nursing of the hospital on the basis of

two criteria. The questions were to cover a variety of the aspects of work technology covered by the original questionnaire and they should "make sense" given the context of this particular hospital. On a seven-point scale running from "very strongly agree" to "very strongly disagree", respondents indicated their degree of agreement with statements describing their jobs on parameters relevant to the routineness of work technology. For example, the statement based upon Leatt and Schneck's Question 4 was, "The patients on the unit where I work have complex problems that are not well understood"; the statement for Question 8 was, "On this unit there is a lot of time pressure to get things done"; the statement for Question 21 was, "On this unit there are many emergencies". These questions were used to yield a single score of work routineness. In the sample used in this study the alpha for this scale was .68.

The nursing unit type on which each nurse worked was established with a single question on the questionnaire. It asked, "What kind of ward are you working on at present?" Below this were options to check off, intensive care unit, medicine, etc., with the last option reading, "Other (specify)". On the basis of the responses to this question the nurses were grouped by unit type in the data analysis.

The needs for affiliation, achievement, and power were measured using Stahl's (1986) Job Choice Exercise. This instrument is based upon behaviour decision theory modeling and has been validated by Stahl and his colleagues (Harrell & Stahl, 1981; Stahl, 1983, 1986; Stahl & Harrell, 1982). Responses are scored using software developed by Stahl and Gulati (1985).

Satisfaction of the needs for achievement and affiliaton was measured using questions developed by the researchers. For satisfaction of the need for achievement, respondents indicated on a seven point scale, running from "very strongly agree" to "very strongly disagree", their degree of agreement with two statements; "I feel that in my job there are few goals being met so I seldom feel that I am accomplishing anything", and, "I feel that in my job there are clear challenging goals which I usually accomplish". The average of these two questions (with the first one reversed) was used as the measure of the degree of satisfaction with need for achievement. The alpha for this scale for the present study was 0.72. For satisfaction of the need for affiliation, respondents indicated on a seven point scale their degree of agreement with two statements; "I feel that on my job I do not have enough time to spend just being friendly with people", and, "I feel that in my job there is just the right amount of time to chat and be friendly with people". The average of the responses to these statements (with the first reversed) was used as the measure of satisfaction of need for affiliation. The alpha for this scale in the present study was 0.77).

Demographic data, including the units on which the nurses worked, were collected with a series of questions on the last page of the questionnaire.

Results

Hypothesis 1 was partly confirmed. A one-way ANOVA, with routineness of technology as the dependent variable and nursing unit type as the independent variable, showed a significant effect of nursing unit type upon work technology ($F = 19.8$; $p < .001$). Nursing units were rank ordered from most non-routine to most routine as: emergency, operating room, intensive care unit, surgical, medical and obstetrics. This is the order predicted in hypothesis 1 and is consistent with past findings (Comstock & Scott, 1977; Leatt & Schneck, 1981, 1984). The ANOVA thus established that there were significant differences between units on work technology. However, ANOVA does not show which specific units are significantly different from each other. A test of this was performed using the Tukey HSD procedure as a *post hoc* test. This showed that not all of the units were significantly different from each other. They formed two clusters, one consisting of non-routine units, the other consisting of routine units. The non-routine cluster included emergency, the operating room and the intensive care unit. On the Tukey HSD test, none of these was significantly different from any of the others. The routine cluster consisted of obstetrics, surgical and medical. On the Tukey HSD test none of these was significantly different from any of the others. Although within the clusters the units were not significantly different from each other, all of the units in the non-routine cluster were significantly different from all of the units in the routine cluster. The only exception to this was that the intensive care unit was not significantly different from the surgical. In summary, the order of the units on the work technology variable was as predicted, but the differences were not all strong enough to be statistically significant. Those differences that were significant divided the units quite cleanly into two clusters. The non-routine cluster included emergency, the operating room and intensive care. The routine cluster included medical, surgical and obstetrics. Given the clustering in the present data, routineness of technology will be treated as a two-level variable in the remainder of this study.

Hypothesis 2, that the motive profile of nurses on non-routine technology units is (need for affiliation = need for achievement > need for power), was confirmed. The mean motive scores for the non-routine units are shown in Table 1. Also, t-tests showed that need for affiliation was not significantly different from need for achievement, that need for affiliation was significantly greater than the need for power ($t=4.11$; $p<.001$), and need for achievement was also significantly greater than the need for power ($t=2.97$; $p<.01$).

Table 1

Technology and the Motive Profiles of Nurses

Motives and Work Technology	Samples		
	Routine Technology Units (n=56)	Non-Routine Technology Units (n=34)	Stahl's (1986) Study (n=19)
Need for affiliation	61(24)a	58(26)a	63(23)
Need for achievement	48(27)b	53(27)a	49(26)
Need for power	37(25)c	33(28)b	52(26)
Non-routineness of work technology	3.9(0.6)	5.1(0.6)	--

The motive scores are the average scores of the nurses in the indicated groups. The motive scores are percentiles. For example, the score of 61 on the need for affiliation of nurses on the routine technology units means that 61% of the people in the general population have need for affiliation scores lower than the average score found for nurses on the routine technology unit. If a person gets a score of 50, it means that that person's score is at the population median, ie. 50% of the population has a score lower than that person. The numbers in brackets after each mean are standard deviations. In the columns for routine and non-routine technology units, motive scores with the same letter (a, b or c) are not significantly different from each other, scores with different letters are significantly different from each other. Stahl did not provide significance of difference information for his sample.

Hypothesis 3, that the motive profile of nurses on routine technology units would be (need for affiliation > need for achievement = need for power), was partially supported. The average motive scores of nurses on the routine technology units are shown in Table 1. The t-tests showed that need for affiliation was significantly greater than the need for achievement ($t=2.12$; $p<.05$) and that need for affiliation was significantly greater than the need for power ($t=4.49$; $p<.001$), as predicted. However, unexpectedly, need for achievement was significantly greater than the need for power ($t=2.38$; $p<.05$). Thus the profile found here was (need for affiliation > need for achievement > need for power).

Hypothesis 4, that satisfaction of need for achievement is a function of the interaction of work unit technology and need for achievement, was confirmed. A step-wise multiple regression was run with satisfaction of need for achievement as the dependent variable and work unit technology, need for achievement and their interaction as the independent variables. The interaction was entered in the last step to determine if it accounted for a significant increment in variance explained. As shown in Table 2, it did. To explore the

nature of the interaction, Pearson correlations between need for achievement and satisfaction of the need for achievement were calculated separately for the non-routine units and the routine units. As predicted, for the non-routine technology units the correlation was positive (r=.37); for the routine technology units it was negative (r=-.17).

Hypothesis 5, that satisfaction of need for affiliation would be a function of the interaction of work unit technology and need for affiliation, was not supported. A hierarchical multiple regression analysis was run with satisfaction of the need for affiliation as the dependent variable and work unit technology, need for affiliation and their interaction as independent variables. When the interaction was entered in the last step it was not found to add a significant increment in the amount of variance explained (Table 2).

Table 2

The Effects of Technology and Motivation Upon Satisfaction

Dependent variables	Standardized Regression Coefficients			R^2
Satisfaction of need for achievement	TECH	NACH	TXN	
Step 1	0.74	0.06		.01
Step 2	0.61	1.01	-1.07	.09*
Satisfaction of need for affiliation	TECH	NAFF	TXN	
Step 1	-0.03	-0.12		.01
Step 2	-0.11	-0.23	0.15	.01

N=90.

TECH = work unit technology, high or low. NACH = need for achievement. NAFF = need for affiliation. TXN = interaction of TECH and the need.

R^2 values show the total variance explained after all variables in the step are entered.

* - $p<.05$

Discussion

This study supports the proposition that different work places (even within the same profession) accumulate and satisfy workers with different motive profiles and that the work technology of the workplace is one of the variables operating in this process. This study confirmed past studies that showed that different units in hospitals are characterized by different levels of routineness of technology. It further showed that nurses on non-routine technology units have a different motive profile than those on routine tech-

nology units. Need for achievement is relatively more important on non-routine technology units than it is on routine technology units. Finally, it showed that the degree of satisfaction with need for achievement is a function of the interaction of need for achievement of the nurse and the work technology of the unit on which the nurse works. When non-routine technology is in use, high need for achievement nurses tend to be more satisfied than low need for achievement nurses. When routine technology is in use, high need for achievement nurses tend to be less satisfied than low need for achievement nurses.

In this study it was found that the nursing units, when rank ordered on the basis of work technology, showed a pattern consistent with past empirical findings and with the hypotheses presented here. However, a significance test divided the units into only two groups, one with non-routine technology and the other with routine technology. This failure to find significant differences between all of the units is consistent with the findings of Leatt and Schneck (1981, 1984). Leatt and Schneck used larger samples and the complete routineness of technology questionnaire, but also found that the differences between individual units were not always statistically significant. As in the present study, the units had to be arranged in clusters. None of the measures of work unit technology so far used is sensitive enough to detect significant differences between all of the nursing units studied. That such differences are not trivial is suggested by the fact that significant differences in satisfaction are associated with the significant differences in work unit technology that have been found, as shown by the confirmation of hypothesis 4. Future research should attempt to refine the instrumentation so that smaller differences in work unit technology can be detected and associated differences in satisfaction, if they exist, can be explored.

Our study has helped to refine our understanding of the motive profiles of nurses. The evidence available suggests that need for affiliation is an important motive among nurses, regardless of work unit type. As shown in Table 1, both the present study and Stahl's (1986) found need for affiliation to be the strongest need of nurses and that the average need for affiliation of nurses (around the 60th percentile) is above the population norm of 50. This occurs even when nurses work on units with non-routine work technology. The failure, under hypothesis 5, to find a significant interaction effect of work technology and need for affiliation upon satisfaction further confirms the proposition that need for affiliation pervades nursing. The evidence of this study clearly supports Chusmir's (1985) and Stahl's (1986) statements that need for affiliation is functional in nursing because it is a helping profession that requires considerable social interaction. In contrast, need for achievement seems to be a secondary motive. As shown in Table 1, the average achievement scores cluster around the 50th percentile with some elevation for non-routine technology units. Only in non-routine technology

units does the need for achievement become as important as the need for affiliation, as shown in the needs profiles. The place of the need for power in the profile of nurses is much less clear. Stahl (1986) found the need for power of his sample to average 51.0, quite a bit higher than the values in the 30's found in the present study. There is no ready explanation for this discrepancy. Perhaps it is attributable to the nationality (American vs. Canadian), nature of the hospital, nature of the community in which the hospital was based, or any of a number of factors. The role of need for power in nursing is an issue needing further exploration.

The tie between work technology, nurses' motive profiles and satisfactions found here is a promising result. It shows that our ability to predict profiles can be refined by going beyond the technique used in the past, which was to use occupational category as the sole independent variable. This refinement suggests that even more supportive data will come in the future. Other studies of work technology should be undertaken using more refined instrumentation. In particular, the measures of satisfaction with motives used in the present study had only two questions each, because of time limitations for the administration of the questionnaire. Future studies should develop longer scales and test their validity in a more systematic way than was done here.

Administrators in hospitals may find these results to be quite suggestive. If further work confirms that motive profiles influence worker satisfaction, and this can be extended to include work performance, absenteeism and turnover, motive profiles could be used as one basis for selecting nurses and assigning them to units. Seybolt, Pavett and Walker (1978) and McCloskey (1974) have found that frustration of growth needs (such as the need for achievement) is a predictor of nursing turnover. Such systematic use of motive profiles must await further confirmatory research but in the meantime nursing administrators may take the present results into account in dealing with the nurses on their units. They can attempt to be sensitive to the achievement needs of nurses, particularly on non-routine units, so that informal ways can be found to help nurses get the most from their work.

Absenteeism and turnover are costly, natural processes through which individuals adjust to inappropriate work settings and gravitate to more appropriate ones. Methods derived from this and other research can aid managers to circumvent these processes and the tangible and intangible costs associated with them.

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RÉSUMÉ

La technologie et les profils de motivation du personnel infirmier

L'importance relative du besoin d'affiliation et du besoin de réussite des infirmiers et infirmières est fonction de la technologie utilisée dans leurs services. Chez le personnel infirmier d'unités où l'on utilise couramment les technologies modernes (médecine, chirurgie, obstétrique), le besoin de réussite n'est pas aussi fort que le besoin d'affiliation. Chez le personnel infirmier d'unités où l'on n'utilise pas couramment les technologies (urgence, chirurgie, soins intensifs), le besoin de réussite est aussi fort que le besoin d'affiliation. Le degré de satisfaction au travail des infirmiers et infirmières est fonction de leurs besoins et de l'unité où ils travaillent. Dans les unités où l'on fait une usage courant de la technologie, le degré de satisfaction est moins élevé chez ceux qui éprouvent un grand besoin de réussite que chez ceux où ce besoin est moins marqué. Dans les unités où l'on fait un usage peu courant de la technologie, le degré de satisfaction du personnel infirmier est plus élevé lorsque le besoin de réussite est marqué.

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School of Nursing

DIRECTOR
MANITOBA NURSING RESEARCH INSTITUTE

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The University of Manitoba encourages applications from qualified women and men, including members of visible minorities, aboriginal people and persons with disabilities. The University provides smoke-free work environment. Priority consideration will be given to Canadian citizens and permanent residents. Rank and salary will be commensurate with qualifications and experience. Registration with the Manitoba Association of Registered Nurses is required.

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