Sustainable Prevention and Work Environment

Studies and Research Projects

REPORT **R-846**

Impact of Work Environment on Nurses' Job Satisfaction and Well-Being

Improving End-of-Life Care and Services

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PEER REVIEW

In compliance with IRSST policy, the research results published in this document have been peer-reviewed.

SUMMARY

Because the population is aging, the demand for palliative care (PC) at the end of life (EoL) is on the rise, and healthcare services are organizing themselves accordingly. In Quebec, EoLPC is mainly found in combination with curative care. There are very few facilities dedicated to palliative care; instead, it is dispensed as part of home care or in the specialized wards of hospital centres, such as oncology or critical care, where nurses play a major role. Because of this organizational choice, nurses experience a very particular work context, since they have to take a mixed approach and dispense both curative care—which can be complex at times—and EoLPC, all under considerable time pressure. In hospitals, where the primary aim is to cure illness, death is often perceived as a failure. This is a source of occupational stress and dissatisfaction for nurses, who have to deal with death frequently, and sometimes the death is a difficult one. They can experience moral conflict and ethical suffering. In addition, there are other stress factors—such as intensification of work and lack of autonomy—that can affect their job satisfaction and well-being.

Against a backdrop of labour shortages and increasing difficulty attracting and retaining nurses, these are very worrisome observations, since job dissatisfaction and high turnover could jeopardize the quality of healthcare. In light of these facts, it appears more and more imperative that nurses' job satisfaction and adaptability be taken into account in the organization of services and development of PC programs. The aim of our project is to improve the conditions in which EoLPC is dispensed. Five studies were conducted to identify problems in this sector of healthcare and to suggest avenues for action.

STUDY 1. Study of stress factors in ICUs
Objective: To describe the stressors experienced by nurses dispensing EoLPC in intensive-care units (ICUs) in various hospitals in Quebec.
Method: We selected five ICUs in three regions of Quebec, taking care to ensure diversity in terms of location (urban or rural), organization of care and services (open or closed ICU)[1] and status (university-affiliated or not). We recruited a sample of 42 nurses (day, evening, night and rotating shifts). Ten focus groups were held.
Observations: The stressors linked to EoLPC nursing in an ICU are numerous and can be grouped into three categories: organizational, professional and emotional.

STUDY 2. Ergonomic study of EoL care in ICUs
Objectives: To describe EoLPC services on the basis of direct observations in an ICU, and to explore the factors that influence job satisfaction for nurses.
Method: Thirty shifts were observed in two of the five sites used in Study 1.
Observations: The ergonomic study revealed several shortcomings in the dispensing of EoL care. The nurses seem to have little say in decisions, and the work is not organized with dying patients in mind. EoL care seems neglected; neither the protocols nor the resources (time, space, training) are adequate. The study also showed, however, that something that can be a source of difficulty can, under other conditions, become a source of job satisfaction.

[1] An "open ICU" is one in which the attending physician admits the patient and retains responsibility for his or her treatment. A "closed ICU" is one in which the patient, once admitted, is transferred to the care of an intensivist assigned to the ICU full time.

STUDY 3. Study on moral stressors and ethical dilemmas in ICUs
Objectives: To gain a deeper understanding of moral stressors, to identify ethical dilemmas and their connection with ethical suffering, and to better comprehend how such dilemmas are solved.
Method: Individual interviews with 28 nurses (same selection criteria as in Study 1).
Observations: The nurses reported the following moral stressors and ethical dilemmas: (a) what they perceive as futile medical care; (b) withdrawal of treatment and what they perceive as euthanasia; (c) being powerless to relieve someone's suffering; (d) failure to respect the patient's wishes; (e) lies about the patient's condition.
This study highlights the nurse's solitude when faced with an EoL ethical dilemma. Nurses have no safe space for discussion that would enable them to restore meaning to their work, and so they retreat into silence that can last for years. In this way, ethical dilemmas lead to ethical suffering.

STUDY 4. Study on conditions conducive to the resolution of ethical dilemmas
Objective: To describe organizational practices that support the resolution of moral dilemmas, as seen from the perspective of managers.
Method: Individual interviews, n=21 managers at the same sites as in studies 1 and 3.
Observations: Analysis of the managers' discourse reveals their powerlessness and provides little in the way of possible solutions. Developing ethical skill through a systematic training program could be one avenue for attenuating work-related ethical suffering.

STUDY 5. Study of a stress model for better understanding of nurses' job satisfaction and well-being
Objectives: To improve the stress model (demands/resources) developed during previous research, and to determine whether this enriched model can explain the job satisfaction and distress experienced by nurses providing EoLPC.
Method: Population-based, cross-sectional study of correlations.
Inclusion criteria: Participants had to belong to the OIIQ (Ordre des infirmières et infirmiers du Québec), had to practise in the Province of Quebec, and had to be dispensing palliative care, either in palliative care settings, in people's homes, in oncology or in critical care (n=751).
Observations: The enriched model supports the conclusions of the four qualitative studies described above. It incorporates several key concepts: recognition of the nurse's autonomy, the quality of teamwork, access to qualified human resources, and relief of the patient's and family's suffering. The model can explain more than 80% of job satisfaction and 40% of distress, with staffing shortages topping the list of contributing factors. Finally, meaning at work mediates between autonomy and job satisfaction. The model confirms the need to take into account whether the nurse's values are consistent with those of the organization.

Avenues for action are proposed with a view to improving support—organizational, professional and emotional—for nurses providing EoLPC.

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List of Abbreviations and Acronyms

CHPCA	Canadian Hospice Palliative Care Association
ASSS	Agence de la santé et des services sociaux
CFI	Comparative Fit Index
CHSLD	Centre d'hébergement et de soins de longue durée
CSSS	Centre de santé et de services sociaux
DQC	Direction québécoise du cancer
EoL	End-of-life
EoLPC	End-of-life palliative care
ERI	Effort-reward imbalance
ERMOS	Équipe de Recherche Michel-Sarrazin en Oncologie psychosociale et Soins palliatifs
INESSS	Institut national d'excellence en santé et services sociaux
IRDPQ	Institut de réadaptation en déficience physique de Québec
IUCPQ	Institut universitaire de cardiologie et de pneumologie de Québec
JDC	Job Demand-Control
JDCS	Job Demand-Control-Support
MMS	Maison Michel-Sarrazin
MSSS	Ministère de la Santé et des Services sociaux
OIIQ	Ordre des infirmières et infirmiers du Québec
ORIIQ	Ordre régional des infirmières et infirmiers du Québec
WHO	World Health Organisation
RQSP	Réseau québécois de soins palliatifs
RUIS-UL	Réseau universitaire intégré en santé de l'Université Laval
RMSEA	Root mean square error of approximation
SATIN I	Research project on job satisfaction and well-being among EoLPC nurses
PC	Palliative care
ICU	Intensive care unit

INTRODUCTION

This research project, titled SATIN I (2007–2012), is made up of five studies and is built on a solid partnership between researchers (in palliative care, nursing sciences and industrial relations), clinicians, decision makers and numerous other knowledge users, all of whom are interested in continuing with SATIN II, the anticipated follow-up. The aim of SATIN I is to improve the conditions in which end-of-life palliative care (EoLPC) is dispensed, by empirically validating and testing a theoretical model for understanding job satisfaction and well-being among PC nurses. This report describes the research methods and results for the five studies. Three qualitative studies were conducted on nurses in the intensive-care units (ICUs) of five hospitals in three regions of Quebec. One qualitative study involved key managers in those same hospitals. A quantitative study was then conducted on nurses working in intensive care, oncology, palliative care or home care in Quebec.

The report is in five sections. The first presents the problems and issues along with the state of knowledge. The second describes the aims, objectives and methodology of each study. The third presents the results of each of the studies. In the fourth section, we discuss and integrate the results of all five studies. The last section deals with applicability and potential benefits. The document ends with a brief conclusion.

1. PROBLEMS, ISSUES AND STATE OF KNOWLEDGE

Work intensification and the stress that goes along with it are part of today's reality in many industries in Quebec,[1] including healthcare. For nurses, stress has been the subject of several studies in Quebec in recent years.[2,3,4,5,6] Reorganizations in healthcare have resulted in considerable increases in workload and reductions in resources and organizational support. Consequently, nurses are particularly exposed to occupational stress.[2] Stress not only is one of the main causes of distress, dissatisfaction and even burnout,[1,6] but is also capable of causing problems with staff retention, turnover and absenteeism among nurses.[6]

The psychosocial risk factors of occupational stress are thought to affect certain areas of nursing more than others. Studies have shown that nurses working in EoLPC are exposed to particular emotional demands,[7,8,9] since this kind of work involves direct daily contact with death and requires emotional involvement by nurses. On the other hand, working in PC has also been linked to greater job satisfaction than other areas of nursing, which could be due to teamwork and high-quality care. Nonetheless, it does involve special emotional demands or sources of emotional stress.[5,10,11,12] In addition, most studies have been quick to compare the demands in the various sectors of healthcare, taking into account the particular resources and organization of services in palliative care. Our previous work, as well as other research, has shown the difficulty of providing EoLPC in a curative context.

Organization of EoLPC services: Towards a conceptual framework

In Quebec and in the rest of Canada, many initiatives aimed at improving EoLPC are taking shape. At a time when the population is aging and the mortality rate is rising inexorably, the demand for EoL care and services continues to increase. Hospice palliative care "aims to relieve suffering and improve the quality of living and dying" (CHPCA).[13] According to the World Health Organisation (WHO), PC provides relief from pain and other distressing symptoms; integrates the psychological and spiritual aspects of patient care; affirms life and regards dying as a normal process; intends neither to hasten nor postpone death; offers a support system to help the family

cope during the patient's illness and in their own bereavement; uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated; and will enhance quality of life (WHO, 2002).

In Quebec and Canada, despite improvement in recent years, access to PC services remains limited, and there is a gap between availability and the needs of the population. While the majority of Canadians say they would like to die at home or in more humane conditions,[14] one report states that from 1997 to 2001 in Quebec, only 8.3% of adult candidates for EoLPC died at home (9.7% in the case of deaths from cancer).[15] Among adult candidates for EoLPC, 47.6% died while hospitalized in short-term care (excluding deaths in palliative-care facilities [8.1%]). Canadians' growing desire to die at home, in more humane conditions, is putting new pressure on the healthcare system and its personnel.

Although Quebec has adopted an EoLPC policy,[16] program implementation largely remains undone. EoLPC is offered mainly in the home and in hospitals, and the service offering is not uniform. Home services are overseen by the home care programs of the Centres de santé et de services sociaux (CSSS). Access to and organization of home care services vary from one CSSS to the next (MSSS, 2004); some have a coordinated team ready to rapidly take charge of patients at the end of life, but this is not always the case. In hospitals, too, accessibility and the quality of organization of EoLPC vary from one establishment to the next. Many have no organized PC programs or services, so EoLPC is limited to basic care dispensed to the dying through curative care and designated as "comfort care." However, the principles of PC should be incorporated everywhere, even in intensive care, since patients are at risk of dying there.[17] Even if some hospitals have beds or wards dedicated to PC or a multidisciplinary team offering mobile services to the dying, terminal-stage patients usually die in intensive care without ever having access to PC. Whether at home or in an HC, the organization of PC varies greatly from one place to another, and most nurses in Quebec practise EoLPC with no training or support and using a mixed approach, i.e., dispensing both curative care and comfort care to the dying. This is especially true in oncology and intensive-care units, where there are high death rates.

For nurses, who play a critical role in healthcare, this situation is liable to create moral conflict and ethical suffering.[18] Added to that are other stress factors[19]—such as work intensification and lack of autonomy—that diminish their job satisfaction and well-being, and make nursing a less attractive career. Against a background of labour shortages and increasing difficulty in attracting and retaining nurses,[20,21] this is a worrisome observation. What is more, job dissatisfaction and high turnover could jeopardize the quality of healthcare. In the organization of PC services, nurses' adaptability must be taken into account, along with the factors that influence their job satisfaction. In our approach, we propose continuing to develop a conceptual model of occupational stress based on an original approach involving partnering with decision makers, clinicians, researchers in nursing science, researchers associated with two research teams (PC and industrial relations) and other knowledge users. The project is aimed, first, at gaining a better understanding of the context in which EoLPC is dispensed, especially using the mixed approach (curative and palliative), by documenting EoLPC practice in ICUs—an environment where the contrast between curative and palliative care is especially pronounced. Second, it is aimed at improving a model of occupational stress (demand/resources) and validating it empirically among Quebec nurses working in healthcare sectors particularly exposed to dying: home care and, in hospitals, oncology, intensive care and palliative care.

State of knowledge

Our literature review focused on the following issues: job satisfaction and well-being among nurses; occupational stress models; demands and resources specific to palliative care; our work prior to the project; stress factors associated with dispensing EoLPC in an ICU; and meaning at work.

Job satisfaction and well-being among nurses

A Canada-wide summary of the literature on nurses' job satisfaction[22] states that occupational stress, lack of autonomy (control, support and recognition), autocratic leadership, conflicting roles, routine and the rarity of promotions all lead to dissatisfaction and turnover among nurses. Other studies emphasize the importance of high-quality teamwork and interpersonal relations,[23] centered on the patient[24] and the quality of care.[25] One survey grouped the main factors into two categories: quality of interpersonal relations and quality of care.[26]

Occupational stress models

Our initial stress model can be included among the approaches based on a balance between demands and resources in the work environment. It incorporates two extensively studied theoretical models of occupational stress: the Job Demand-Control-Support Model[27] (JDCS) and the Effort-Reward Imbalance Model[28] (ERI), as well as theoretical aspects specific to PC.

JDCS. From its beginnings in the late 1970s, Karasek's model[29] (Job Demand-Control; JDC) dominated research on occupational stress.[30] A decade later a third dimension, social support (Job Demand-Control-Support or JDCS), was added.[27,31] "Demand" means time pressure, heavy workload, role conflicts and job complexity. "Control" or decision latitude has to do with decision authority and skill use. The opportunity to learn, to be creative and to take part in decisions gives one a feeling of control. Support from co-workers or superiors acts directly or has a moderating effect on the demands of a job, as can control. In this model, employees subjected to high demands, along with low control and low social support, run a greater risk of experiencing stress and developing health problems. This tension tends to affect well-being and job satisfaction.

ERI. Siegrist's model[32] posits that occupational stress arises when there is an imbalance between effort and reward. "Effort" refers to the demands placed on the employee, such as work pressure, interruptions, contradictory requirements, and task complexity. "Reward" refers to the benefits of the job: salary, consideration/respect, and job security and advancement. The ERI model predicts that an imbalance between effort and reward will have negative impacts on well-being. Some authors[33] maintain that this model is better suited to women than the JDCS model, suggesting that women place more importance on effort-reward balance than on a need to have control over their job (as in the JDCS model). Others argue that ERI is better than JDCS for explaining stress in professionals in the service industry, where human contact is required—such as in nursing.[34,35]

Demands-resources model. Although JDCS and ERI are still used, they have often come under fire for their simplistic and static nature.[36] It has been argued that the two models should be combined and that aspects specific to the job should be added[37] to improve the models' ability to predict job satisfaction and well-being when the samples studied are homogeneous.[38] In our earlier research, we applied these recommendations by including job-specific stress factors in our qualitative study aimed at describing the organizational, professional and emotional demands and resources specific to EoLPC nursing.[39]

Integration of models for psychosocial occupational risk factors. Recently, there have been efforts to integrate all these approaches, along with other models, in order to identify areas of

commonality. The Collège d'expertise sur le suivi des risques psychosociaux au travail, in response to a request by the ministry of labour and health in France, submitted a report on psychosocial occupational risks[40] in which the authors had conducted a literature review and consulted various experts. Rather than supporting a particular model of occupational stress, the report proposes grouping risk factors as follows:

> The psychosocial occupational risk factors identified in the scientific literature can be grouped into six categories: work intensity, emotional demands, lack of autonomy, poor social relations in the workplace, moral conflicts and job insecurity.[41] (Our translation)

Several of these factors have been linked to health and job satisfaction among European paramedics who participated in the PRESST-NEXT survey[42] and French physicians who participated in the SESMAT survey.[43]

PC-specific demands and resources

Our efforts to conceptualize stress according to a demands-resources model, combined with the work described in the literature,[44,45,46] enabled us to group demands and resources, in the context of EoLPC in Quebec, into three interrelated categories: organizational, professional and emotional.[39] *Organizational demands (or stressors)* are those linked to the organization of work and to the particular context in which nurses work. They largely correspond to those identified in the literature on job satisfaction in general: work intensity, lack of influence or autonomy, and organizational problems related more specifically to PC, such as the fact that PC is not recognized as a specialty, the lack of programs that would enable EoL care to be oriented according to the principles of PC, shortages of dedicated material and human resources, lack of involvement in decision-making (for example regarding the level of care), and conflicting demands (for example, the necessity of a mixed approach, i.e., dispensing both curative and palliative care). Our earlier work showed that conflicts stemming from a mixed approach are a key issue in oncology, which is a specialized area. *Organizational resources*, on the other hand, would include a program and policies on EoL care, adequate flow of information within the team, within the establishment and between establishments, inclusion of the family as a partner in caregiving, and support from managers and from the organization as a whole.

Next, *professional stressors* are demands and requirements linked to the nurse's professional role. Lack of collaboration within the medical team, difficulty relieving pain and controlling symptoms, lack of training in EoLPC, not enough time to spend with the patient and the patient's family, and difficulty maintaining distance in the therapeutic relationship have been identified by nurses as the main professional stressors. The corresponding *resources* in this category are support from co-workers and access to an interdisciplinary team specializing in PC.

Last, *emotional stressors (or demands)* are those linked to existential concerns: having to witness the suffering of patients and their families, being in constant contact with death and dying, experiencing moral conflicts and feeling unsupported are sources of stress and can generate emotional distress and ethical suffering in nurses. Conversely, emotional support and the gratitude expressed by families can be resources.

Our earlier research

In a previous study, we had developed an initial conceptual framework based on the demands-resources approach. This framework, in which we made a point of including the three categories of resources and demands as well as a PC-specific component, was empirically validated

by means of structural equations.[47,48] The results showed that organizational demands ("psychological demands" in JDC and "effort" in ERI) and resources (people-oriented culture, decision latitude, perceived rewards, support from co-workers and managers) together account for some 25% of the distress and 40% of the job satisfaction of PC nurses. The framework was then used as a cornerstone from which to develop an evaluative research program consisting of three applied studies.[49]

The results confirmed the model's usefulness as a conceptual framework for fieldwork aimed at improving job satisfaction, but they also revealed a number of shortcomings. In terms of the model's utility, humanization of the workplace as a way of providing organizational support and measures promoting nurses' autonomy (decision latitude) received many votes of approval. In light of recent literature, these two recommendations could be part of a broader factor called autonomy.

> **Autonomy** means the possibility for workers to be agents in their work, in their participation in the production of wealth, and in the conduct of their professional lives. Like the "decision latitude" in Karasek's questionnaire, it encompasses not only margins of manoeuvre but also participation in decisions and the use and development of skills. The concept of autonomy includes the idea of work as a source of enjoyment and personal growth. [40] (Our translation)

Indicators for the autonomy factor could be improved by adding the concepts of employee recognition and support for development of individual and collective skills. Indeed, one of our first model's shortcomings is that it is too focused on demands-resources balance for the *individual*; it would benefit from inclusion of a collective aspect factoring in social relations and the quality of teamwork.

> **Social relations** at work are relations between workers and between the worker and the employer. They must be examined in light of the concepts of integration (in the sociological sense), fairness and recognition. They have been partially modeled, and the models that have been the most solidly validated are "social support" (Karasek and Theorell), "effort-reward imbalance" (Siegrist) and "organizational justice." [40]

In palliative care, it has recently been documented that interdisciplinary teamwork (the quality of team functioning and of interpersonal relations) reduces the risk of burnout.[50] Having access to a specialized interdisciplinary PC team is recommended. The quality of social relations should then include team functioning and management of the conflicts that are bound to arise from teamwork and interprofessional collaboration.[51] As for the corresponding resources, the collegial support described in general terms in the JDCS model could be contextualized and could correspond better to social support and team functioning.[52]

Similarly, in terms of emotional demands, the demands particular to EoL care should be represented in the empirical indicators selected. In fact, the work of EoL caregivers is recognized as being especially high in emotional demands. According to the report from France (2011):[40]

> **Emotional demands** arise from the need to control and shape one's own emotions, mostly as a way of controlling and shaping those of the person one is interacting with at work. Hiding one's emotions is also very demanding. (Our translation)

Exposure to the distress and suffering of the dying and their loved ones is a prime example. Cancer victims—a large portion of the clientele in PC—have more distress symptoms than most other terminal patients.[53] The distress can be so wrenching on an emotional, psychological, social and spiritual level that it can prevent those involved from confronting the situation.[54] The caregiver

witnesses this distress frequently and must deal with it. Sometimes there is no way out, and the caregiver must experience complete powerlessness. Moreover, emotional suffering can be compounded by moral conflicts or ethical suffering.

> **Ethical distress** is felt by a person who is obliged to act against his or her professional, social or personal values. **Moral conflict** can arise when the outcome or secondary effects of the work go against the worker's convictions, or when the worker is forced to work in a way that goes against his or her professional conscience.[40] (Our translation)

To understand this factor in the context of EoLPC, an explanation about ethical dilemmas and how they are resolved may be useful in selecting other indicators. For example, the conclusions of the three applied studies suggest that theories about occupational stress in PC could be improved by adding the emerging concept of "meaning at work." Meaning at work and its conceptualization according to three factors[55] (significance/importance, coherence between one's values and the actions one performs, and orientation, or what one is seeking in work) have been documented as a key variable to be incorporated into occupational stress models.[56,57]

SATIN I is built on the initial conceptual framework, based on the demands-resources model, that we developed in our earlier work. The project proposes to improve this model and gain a better understanding of the demands and resources inherent in the mixed model of EoLPC care delivery, including work intensity, autonomy, quality of social relations and, more specifically, emotional demands and moral distress. To this end, the project proposes, in its qualitative component, an in-depth exploration of the factors to be added or fine-tuned in the stress model for PC nurses working in ICUs, an area where the mixed approach (curative/palliative) seems particularly problematic.

Stress factors linked to EoL care in ICUs

Nurses working in ICUs deal with death on a daily basis. One fifth of patients admitted to ICUs die there.[58,59] Nurses have to dispense both curative and palliative care under considerable time pressure. In our earlier work on stressor description, particularly in the context of oncology, the mixed approach was already shown to have links to conflicting demands. In intensive care, as in oncology, death is often inevitable. And in intensive care in particular, where the byword is "keep them alive at any cost," death is too often perceived as a failure.

According to the literature, the stress factors associated with dying in an ICU are multiple and can be placed into two categories: obstacles to EoL care, and moral stressors that can lead to ethical dilemmas or ethical distress. The obstacles are factors that prevent nurses from providing adequate EoL care, for example: staffing shortages; no time or space for the family; lack of experience and training in PC; difficulty in managing pain; communication problems; family demands (unrealistic expectations, frequent calls, distress); lack of decision authority or disagreement among nurses as to the interdisciplinary therapeutic plan to follow; disagreement among physicians as to whether to continue treatment; and other emotional demands such as difficult deaths and the suffering of the dying and their loved ones.[60,61,62] Because studies have been conducted mainly in the USA and are often limited to just one hospital, we thought it would be useful to document the experience of ICU nurses in Quebec.

The literature shows that moral stressors can become ethical dilemmas. Stressors arise in situations where the nurse feels unable to protect the patient, to provide the needed care, or to maintain a psychological environment that facilitates the emotional well-being of the patient and the patient's family.[63,64] The literature reports differences in approach between nurses, doctors and

other healthcare professionals; treatment based on the needs of the physician rather than those of the patient; "comfort" medication used in such doses as to cause respiratory depression; relentless medical treatment of patients in the terminal stage; the nurse's feelings of abandonment and powerlessness when treatment ceases and the tubes are removed; the difficulty of dispensing EoLPC care to younger people; inadequate care due to shortages of qualified EoLPC personnel; the family's refusal to discuss death with the patient.[65,66,67,68,69] While these moral stressors are documented, the resulting ethical dilemmas and the strategies used by nurses to resolve them are not. Such issues and ethical dilemmas have been linked to problems among nurses—psychological (anger, burnout, feelings of powerlessness and insecurity, sadness, a feeling that one's values are not respected),[70,71] physiological (crying, palpitations, headaches, diarrhoea, sleep disturbance),[72] or organizational (changing jobs, leaving the profession)[73]—that can compromise the nurse-patient relationship and, by extension, the quality of healthcare (e.g., distancing oneself, becoming emotionally hardened, avoiding the patient's room).

To deepen our understanding of the ethical issues, one researcher in our team, Lyse Langlois, has developed a methodology[74,75] for establishing a typology for identifying the ethical aspects of a moral dilemma. Her work[76] shows that the people who succeed in escaping from their moral dilemma are those who manage to go from wanting to do something to actually doing something. People who act according to their own values and standards stand out for their internal coherency. This coherency is identified as a form of authenticity with oneself and one's job.[77]

With regard to resources, another researcher in our team, Marie Bellemare, proposes an in-depth exploration of workplace characteristics that makes it possible to observe social relations through an ergonomic approach. The literature in ergonomics suggests that workers, when faced with difficulties, tend to apply regulations,[78] which enables them to achieve organizational objectives and personal goals. These regulations are deployed within the available margins of manoeuvre and are strategies for ensuring high-quality service while maintaining the employee's health.

Meaning at work

Finally, three aspects of meaning at work (coherence, orientation, importance) emerged from our fieldwork and coincide with the definition proposed by Quebec researcher Estelle Morin.[79] Our first applied study[80] showed that coherence at work is linked to systemic cohesion (coherence between personal and organizational values). Our second study[81] showed that job orientation could be linked to the presence of a well-defined organizational value field and the sharing of a common philosophy. Our third study[82,83] established, for the first time, a link between awareness of personal values, the importance of PC work, and the perceived personal rewards associated with it.[84] When the conclusions from these studies were integrated, the recommendation of adding a third dimension to the conceptual model was formulated. The addition of meaning at work, as a factor able to mediate between Demand/Resource balance and Job Satisfaction, was proposed (Table 1 and Figures 1 and 2, initial model and improved model for testing, Appendix A).

To sum up, the SATIN I research project proposes better documentation of mixed-approach palliative-care nursing by deepening our understanding of the demands and resources in this particular work context. Ultimately, it aims to develop and validate an occupational stress model that can be described as the "demands-resources-meaningfulness" model.

2. GOALS, OBJECTIVES, RESEARCH QUESTIONS/HYPOTHESES AND METHODS

The goal was to empirically validate a theoretical model that provides a better understanding of the job satisfaction and well-being of nurses providing EoLPC.

The main objectives were as follows:

(1) To describe stressors experienced by nurses providing EoLPC in ICUs in Quebec hospitals (Study 1)

(2) To describe EoLPC based on direct observation in an ICU and to explore the factors that affect nurses' job satisfaction (Study 2)

(3) To improve our understanding of moral stressors, identify ethical dilemmas and their connection to ethical suffering and better comprehend how such dilemmas are resolved (Study 3)

(4) To describe organizational practices that support the resolution of moral dilemmas, as seen from the perspective of managers (Study 4)

(5) To enrich the stress model and verify the capacity of the enriched model to explain job satisfaction and well-being among nurses providing EoLPC (Study 5)

Five studies were conducted to meet these objectives.

STUDY 1

The first objective was met with a descriptive study, the goal being to describe stress factors or stressors related to EoLPC in an ICU from the perspective of the care-giving nurses. EoLPC in ICUs was not included in our earlier work on developing and testing an initial job stress model. For a better understanding of the variables of interest, it seemed wise to add to the model so the practice of EoLPC in a mixed model of care (curative and palliative) could be better understood. No hypotheses were formulated. Instead we asked the following research questions: What stressors are associated with the roles of a nurse providing EoLPC in an ICU? By what process are these stressors produced?

Method for Study 1

Design and participants. A qualitative descriptive design was used for this study, as in our earlier work. Our sample comprised nurses working in ICUs in five hospitals—four in the Québec City and Montréal areas and one in a rural setting. The study sites were selected for diversity in terms of location (urban or rural), organization of care and services (open or closed ICU and presence or absence of a palliative-care team) and status (university-affiliated or not). At each site, a purposive sample of nurses (day, evening, night, rotation) was recruited.

Study procedure and data collection. Two focus groups were held at each site, for a total of ten groups. Each session lasted about 40 to 60 minutes and was co-facilitated by a researcher and the research coordinator. An audio recording of the discussion was made. Data saturation was achieved, as no new information was being heard by the end of the study. A focus group is a form of research in which a group of six to eight people meet informally for a semi-structured discussion of a particular topic. A discussion guide developed for our earlier work was adapted for the ICU setting. Two topics were covered: (1) inventory and description of stressors associated with EoLPC in the ICU and (2) the process that produces these stressors. To address the first of these two topics, the following question was asked: Can you tell us about the sources of stress that you experience when you provide EoLPC in the ICU? The following questions were asked to address the second

topic: In your opinion, what in your work environment contributes to creating these sources of stress in delivering EoLPC? What situations are most likely to cause you dissatisfaction or discomfort? One of the key aspects of the focus group method is that the group interaction can facilitate the emergence of topics that would be difficult to access otherwise.[85,86,87]

Data analysis. The recorded audio interviews were transcribed in their entirety and reviewed. For the initial stage of the data processing, the program *N-Vivo7* was used. The three categories of stressors described in our earlier work (organizational, professional and emotional) were used to classify the data (Table 3, Appendix A). Descriptive codes were assigned to each unit of analysis (word, sentence or paragraph) representing a source of stress. Content analysis of the qualitative data was performed using two approaches suggested by Miles and Huberman.[88] Transferability, credibility and plausibility[89] were taken into account to ensure scientific rigour: the diversity of the selected sites improves transferability; double coding by two members of the research team ensures credibility; data were validated by participants at two study sites; and to optimize plausibility, the classification of the stressors and the related verbatim transcripts were discussed by the team members to arrive at a consensus.

STUDY 2

Following the description of stressors as perceived by nurses at five ICUs in Quebec, two of the five ICU settings where EoL care is provided were selected for more in-depth documentation of work environment characteristics. This ergonomic study made it possible to meet our second objective. The goal was to describe delivery of EoL care in two ICUs and the factors affecting nurses' job satisfaction. This was a direct observation study conducted in two ICUs. No hypotheses were formulated. The research questions were as follows: What are the daily demands on nurses working in an ICU, particularly in delivering EoLPC? In observed episodes of EoL care, what were the main difficulties encountered and what were the sources of job satisfaction for nurses? What individual and collective strategies did nurses use to deal with these difficulties and provide quality EoL care?

Method for Study 2

Participants. The unit of analysis was the EoL-care episode. Two organizational settings (open and closed ICUs) with different characteristics for provision of palliative care were selected so the dispensing of EoL care as it takes place in reality could be analyzed. Fourteen nurses were observed, one to three times, for a total of 179 hours of observation over 30 work shifts (Table 4, Appendix A).

Data collection and analysis. A preparatory stage comprising the following activities was carried out at each establishment to lay the groundwork for the observation stage: (1) identification and interviewing of key staff (two head nurses and six nurses specializing in critical care or palliative care); (2) collection of documents (on how the departments function, staff characteristics, clientele and the organization's strategic plan); (3) individual interviews with nurses working in the ICU; (4) preparation of an observation plan; and (5) obtaining of consent.

The "paper and pencil" method (no video recording) was used for direct observation of the nurses' work. Actions and communications throughout the work shift were reported, with entries every two minutes. The observations were transcribed in the form of a chronicle[90] that indicated, at two-minute intervals, where the nurse was, what she was doing, the communication she was providing or receiving and any outside events related to the nurse's activity. For every chronicle that included an EoL case, the data were reduced to extract those related to the case and were

presented to the nurse concerned in a self-confrontation interview.[90] To highlight strategies used to cope with the difficulties encountered and the variability of the situations, the materials (observations and verbalization) were then analyzed using the ergonomic model suggested by Cloutier et al.,[91] itself based on an ergonomic work situation model.[90,92,93]

STUDY 3

The purpose of the third study was to gain a better understanding of moral stressors and to provide a more in-depth description of ethical dilemmas faced by nurses providing EoLPC in an ICU. The research questions were as follows: What are the moral dilemmas encountered? What legitimates the nurse's action and contributes to resolution of the dilemmas?

Method for Study 3

Participants and data collection. For Study 3, we used a purposive sample of 28 nurses (25 female, 3 male) working in the same establishments as in Study 1. Langlois' interview guide[74] was used for data collection, as well as the typology for identifying the ethical dimensions of a moral dilemma.[76] Individual interviews were conducted at the workplace using the guide for ethical dilemmas, adapted for EoL care in an ICU. The guide consists of 11 questions designed to facilitate discussion of a situation presenting a major ethical dilemma for the individual providing EoL care, to determine the values in conflict, to find out if the person managed to resolve the dilemma and to identify any obstacles to such resolution.

Data analysis. The data from the audio recordings of the interviews were transcribed and coded by two coders, who also categorized the data. For methodological triangulation, the data were also analyzed using the software program ALCESTE 4.9. This program for statistical processing of textual data analyzes the relative frequency of words in discourse and their co-occurrence, making it possible to identify the representational worlds in the discourse. It then determines links between selected variables and the main representational worlds identified. Last, it plots the results of the correspondence analysis on a Cartesian graph, allowing interpretation of the data in terms of the selected conceptual framework.

STUDY 4

Directly linked to Study 3, Study 4 was designed to meet the fourth objective, with the specific aim of describing managers' perceptions of organizational practices that support resolution of the moral dilemmas described. How do managers perceive the complex situations experienced by nurses working in palliative care? In what way do these situations pose moral dilemmas, according to them? What procedures are available within their organizations for resolving these ethical dilemmas that arise in the provision of palliative care? Where can we find interpretive guidance beyond the model for understanding nurses' well-being and job satisfaction?

Method for Study 4

For Study 4, a qualitative study that is descriptive and exploratory, we used a critical approach like the one in Study 3.

Participants and data collection. A purposive sample of immediate supervisors, middle managers and senior managers was selected. The sample was chosen from the population of managers with the following functions according to the organization charts of the five establishments that participated in Study 1 and Study 3: department heads, medical directors or other intensive-care or critical-care managers, directors of nursing and directors of professional services. Diversity was one of the criteria in selecting participants, as were availability and

willingness to participate. Individual, semi-structured interviews were conducted. The interview guide was based in part on the discourse of the nurses as recorded in Study 3. Langlois was once again a source of inspiration for development of the interview guide,[74] which was first validated with a control group of managers. Exploratory interviews were then conducted (pre-test) and adjustments were made to the interview guide. The guide included questions on measures and mechanisms available to support the nurses (during ethical dilemmas in particular) as well as questions on organizational structure and culture, EoL care protocols, obstacles to ethical action and areas of ethical risk. The interviews lasted an hour, on average.

Data analysis. The data analysis was essentially a content analysis. The interview transcripts were given to participants to validate what they had said. In terms of strategies for managing moral dilemmas, the Langlois approach described above for Study 3 was applied in its entirety. Using a qualitative analysis approach similar to that used in Study 3, the data were analyzed with the software program *N*-Vivo7 and the results were triangulated with the software program ALCESTE 4.

STUDY 5

The fifth objective, the ultimate goal of the SATIN 1 project, was achieved via a quantitative population-based study (main study). Concomitantly with the qualitative studies discussed above and the knowledge transfer and exchange workshops held throughout the project, new variables were included in the initial model. The *Demands* and *Resources* factors of the initial stress model were first enriched by adding and clarifying indicators to more accurately represent human resources, support from supervisors and professional colleagues, team support and moral stressors. The factor *Meaning at work* was added. Two hypotheses were put forward: (1) The enriched model groups indicators according to two improved predictive factors *(Demands* and *Resources*) and integrates a mediating factor (*Meaning at work)*; (2) The enriched model is better able to explain nurses' job satisfaction and well-being than the initial model.

Method for Study 5

Development of a demands/resources/meaningfulness model

The first step in developing the enriched model was to review the initial theoretical model and improve it. The selection of variables to represent the concepts to be added or clarified was finalized in the light of the qualitative studies and the knowledge exchange and transfer workshops held throughout the project (Table 1, Appendix A for the initial and added variables, and Appendix B for a summary of the workshops). Figure 1 (Appendix A) shows the initial model, which consists of two predictive factors: job demands and job resources. Figure 2 (Appendix A) shows the enriched model to be tested, based on the qualitative studies. A comparison of the models highlights the variables added for the demands and resources factors as well as the integration of meaningfulness as a third factor. Table 1 in Appendix A gives more detailed descriptions of the variables in the enriched model.

Validation of the model and its ability to explain job satisfaction and well-being

To validate the enriched model and test its ability to explain job satisfaction and well-being of Quebec nurses providing EoLPC, a cross-sectional study of the Quebec nursing population providing palliative care was conducted. This study made it possible to verify the predictive value of the model by means of structural equations modelling.

Recruiting of participants. The target population comprised Quebec nurses who belonged to the OIIQ and had consented to disclosure of personal information to a third party for research

purposes. Invited to take part in the study were all nurses whose language of correspondence was French or English and who provided palliative care in an ICU, an oncology unit, a palliative care setting or the home.

Data collection and instruments. Data were collected by mail as well as from on-line questionnaires. The questionnaire package used to test the model included a number of validated instruments. All variables shown in Figure 2 for the three aspects of the model (see Appendix A) were covered (see Appendix B2 for a summary description of the questionnaires).

Result analysis. The main objective was to verify the ability of the enriched model to explain job satisfaction as well as its reliability as an indicator of well-being, more specifically, of emotional distress. A two-step approach was used in testing the model.[94] The first step verified the quality of the measurement model. Though confirmatory analyses are recommended for structural equation modelling, for this project we first performed exploratory factor analyses given the innovative nature of the proposed model (addition of several variables). With these analyses, we were able to determine the number of factors to consider. Confirmatory factor analyses were then used to determine if the proposed measurement model was satisfactory or adequate. The second step consisted in verifying the assumed causal relationships between the factors. These two steps were first performed without consideration of the meaningfulness factor in order to first reproduce a model as similar to the previous work stress model (Figure 1 in Appendix A) as possible. Thus, meaning at work was added to the model as a possible mediator only at the very end.

There is no consensus in the literature regarding model validity criteria, but it is suggested that several fit indices must be considered. It is the convergence of all the indices that allows the quality of a model to be evaluated. The following criteria were selected for this study, based in particular on the seminal article by Hu and Bentler[95] and other recommendations.[96] Chi square value must be non-significant ($p > 0.05$), though this criterion is rarely met in large samples. Chi square divided by degrees of freedom (df) must be less than or equal to 2. Root Mean Square Error (RMSEA) must be less than or equal to 0.06. The comparative fit index (CFI) must be equal to or greater than 0.95. And last, the standardized root mean square residual (SRMR) must be less than or equal to 0.08.

Study procedure. The sample was selected from a list provided by the OIIQ that included names, addresses and telephone numbers of potential participants. A first mailing included a letter of invitation to participate in the study. Potential participants were given the option of completing online or paper questionnaires. The mailing also included a participant information form, two copies of a consent form, the questionnaire package and a stamped return envelope. A second mailing (a reminder card) was sent to those who did not complete either the online or paper questionnaire. There was also a third mailing. The data collected were collated with the help of an electronic form produced by the company that developed the online questionnaire. The paper questionnaires were collated by research assistants using this electronic form. The file was then imported into a SAS database.

ETHICAL ISSUES WITH THE FIVE STUDIES

For each study associated with each of the project phases, the necessary steps were taken to obtain authorization from the research and ethics committees of the CHU de Québec (where the project's principal researcher is based) and the other establishments concerned.

3. STUDY RESULTS

In this chapter, we will briefly describe how the partnership was forged in preparation for the studies, and then we will present the study results.

Partnership and workshops

The project began with a consolidation of the alliance initiated when the grant application was written. An inter-sector partnership (health system, research teams) made up of decision makers, researchers and expert clinicians was forged to facilitate knowledge transfer. The idea of extending the findings of our preliminary work by bringing partners together around a common concern—namely, nurses' job satisfaction and the context in which care is dispensed—took tangible form, initially with the drafting of the protocol. When the grants were obtained, the group was consolidated and included researchers in nursing science from two interdisciplinary research teams: a palliative-care team (IRSC-NET, which has since become ERMOS) and an industrial relations team made up of decision makers and expert clinicians from different levels: provincial (MSSS and OIIQ), superregional (Maison Michel-Sarrazin), regional (ASSS and ORIIQ), local (university and affiliated hospitals, IRDPQ, IUCPQ) and others, including representatives from the RUIS-UL. Once the partnership was established, the research team members formed a follow-up committee and met for discussion and knowledge transfer workshops at least once a year to try to reach consensuses on how to improve the stress model, the appropriate methods to implement and a dissemination plan (see Summary of Workshops, Appendix B1).

RESULTS FROM STUDY 1

Description of sample

For Study 1 on the description of stressors in ICUs, there was only one rural non-university site; all the others were urban and university-affiliated. Most of the sites had a team of intensivists running the ICU (closed ICU). One site had intensivists only on weekdays (semi-closed ICU), while another relied on the attending physicians (open ICU). Most of the sites also had a PC team. Our sample consisted of 42 ICU nurses, mostly women with an average age of 35. They all held Bachelor's degrees or college diplomas in nursing, apart from two who had graduate degrees. On average, they had 11 years of ICU experience. Details on the sites and the participants are given in Table 2 (see Appendix A).

Organizational stressors

Several stressors were described in each of the three categories (Table 3, Appendix A). Organizational stressors have to do with organization of work and organizational context. Here we find a lack of structured programs for EoLPC, conflicting demands stemming from the mixed approach, and continuity problems in terms of level of care and medical treatment plans.

Lack of structured EoLPC programs

There are no structured approaches or programs for EoLPC in ICUs. Most sites offer "comfort care," which is not formally defined. According to the nurses, ICU organizational cultures are death-denying and reject the principles of EoLPC, which stands in opposition to the curative mission of an ICU. "And what's hard, too, is that we are intensive-care nurses. We're trained to save lives." (2-C)(Our translation)

There is also a shortage of material resources. All the nurses we interviewed said that ICUs are not an appropriate environment for EoLPC, due to the high-tech equipment (monitors, respirators, etc.) and the constant noise and activity. All the nurses mentioned the pressure linked to the limited number of beds and hence the need to rush EoLPC and mourning by family and loved ones, which in turn generates moral stressors.

> The operating room keeps pushing to have its patient moved into the ICU. This is a daily reality. We're always being pushed, all the time. We're always up against the wall … We're virtually hurrying to get one out so we can get the next one in. (1-C)(Our translation)

All the nurses mentioned the lack of privacy. They also spoke of the lack of space and of places where families could rest and talk. ICUs are not designed for dying or for families. Similarly, despite the presence of a specialized PC team, the nurses noted a lack of access to specialized PC resources. In fact, most of them turned to outside help.

> Sometimes a family wants support; a social worker, for example. So you call, and they say no one is on duty, but we can give you a phone number ... So you call Info-Santé, and if there is someone on duty, they get sent over. Because here at the hospital, there's nothing. You have to call 811. (2-C)(Our translation)

Conflicting demands arising from the mixed approach

For most nurses, having to dispense curative care to one patient and palliative care to another is a major source of stress. They feel that they have to give priority to the patient who might survive and therefore devote less time to EoLPC for the other. "… at one point, they decided to stop treatment during a change of shift, and in my other room I had to intubate a patient… So you have to make a choice." (2-A)(Our translation)

Lack of information about level of care and medical treatment

There were complaints about disagreements regarding level of care and medical treatment plans. Participants criticized the lack of continuity of written and oral information between physicians and between physicians and nurses. Physicians do not always agree among themselves about the level of care to be dispensed and do not always communicate their treatment plan in writing. The lack of consensus interferes with the continuity of care. This stressor seems to generate several other stressors, especially in terms of interprofessional collaboration.

Professional stressors

Professional stressors are generated by the demands and requirements of the nurse's professional role: for example, the lack of training in EoLPC, difficulty communicating with the family, difficulty collaborating with the medical team, and the absence of protocols or guidelines for EoLPC.

Lack of training in EoLPC

All of the nurses pointed out a lack of training in EoLPC, for both nurses and physicians. Certain skills could be reinforced: pain relief, management of symptoms, communication with the family and the administrative aspects of death. Too often, nurses must develop their skills by being thrown into situations. Many new nurses have never seen a person die.

> New nurses arrive and start to panic when you say, "OK, we're stopping treatment this evening." … It should be part of their training in intensive care. (2-C) (Our translation)

Skills valued in the ICU are efficiency and speed. In EoLPC, however, different skills are required. Speed has no meaning, and technology is not needed.

> In the ICU if you're a technical nurse, if you're strong, if you're fast, if you can deal with a heavy patient, you get respect, but if you're somebody who's particularly kind, like, we have a male nurse who's very gentle, very, and one of my colleagues said "He belongs in palliative care, he doesn't belong here." (1-D)

Difficulty communicating with the family

ICU nurses often have trouble communicating with the family. Family members, because they are continually present at the patient's bedside, tend to ask questions about the patient's condition, the care being given and the treatment prescribed. Nurses sometimes feel uncomfortable about being unable to give the family certain information because of inadequate information transfer between physicians and nurses, mentioned earlier. Moreover, the family naturally turns to the nurse for explanations about what the doctor said. This adds to the stress on the nurse, who finds herself acting as a relay between the family and the physician. Communication problems sometimes generate complaints by families or physicians against nurses, thus aggravating their frustration and emotional distress.

Difficulty collaborating with the medical team

The nurses deplored their lack of involvement in decisions about level of care and therapeutic plans. Most (7 of 10 focus groups) mentioned a lack of decision authority in their daily practice. Nurses said they were not consulted or even listened to in the decision-making process, even though they feel they have a special relationship with the patient and the family. "The dissatisfaction, in a way, is because our expertise is often discounted..." (2-A)(Our translation) Some nurses complained about a lack of medical leadership in the decision-making process in some cases.

> Some families are incapable of making the decision to terminate a life. Then the physician should step up to the plate. Because it's the physician who has the medical experience, not the family. The family doesn't feel capable of making the decision, because they don't have the knowledge. (2-D)(Our translation)

Absence of EoLPC protocols and guides

The lack or absence of clear protocols was raised by most of the nurses (8 out of 10 focus groups) as a stressor.

Emotional stressors

Emotional stressors include moral stressors (opposing values), lack of emotional support, the difficulty of managing emotions, and the patient's and family's distress. In ICUs, these factors seem strongly linked to the organizational and professional stressors described above.

Moral stressors

All of the nurses interviewed said they had experienced value conflicts and moral stressors such as questioning the utility of a treatment or examination when death seemed imminent. This type of stressor is described in greater detail in Study 3.

Lack of emotional support and difficulty managing emotions

The nurses spoke of the high emotional demands connected with the end of life and the lack of support.

> Sometimes it's hard to offer support to the family when you're having trouble coping yourself. One case I had was a young man who had shot himself in the head and whose body was being taken for organ donations. His mother and sister, devastated in front of the nursing station, crying. Couldn't get them to budge. And then I entered the room and I went, oh my God, I'm going to be the one taking care of all this tonight. (2-C)(Our translation)

Being pressed for time makes it more difficult to process emotions. Too often, ICU nurses have no opportunity or safe space for expressing their suffering. "It's really something. You've just seen someone die, and you have to rush off to another patient who's not doing well. And you're supposed to be just as focused and present." (1-B) (Our translation) Even outside the workplace, nurses often have no opportunity to talk about their emotional distress, since the reality of intensive care is hard for families and friends to grasp.

Suffering of the patient and family

Most of the nurses (8 groups out of 10) said it was difficult to witness the suffering of patients and their families.

> For me, it all depends how far along we are in the treatment withdrawal process. If I arrive at 4 p.m. and it's already started, I haven't met the family or friends, and it's obvious that the patient will die within minutes… (1-B)(Our translation)

Nurses would like patients to be able to die with dignity and families to have a moment to grieve—the basic principles in palliative care. The feeling of being unable to help the dying gives rise to dissatisfaction and brings up, once again, the subject of moral stressors, which were examined in greater depth in Study 3.

To sum up, Study 1 identified several stressors—organizational, professional and emotional—all of which seem to be interrelated. Organizational stressors, in particular, seem to aggravate certain stressors in the other two categories.

STUDY 2 RESULTS

The second study was an ergonomic analysis based on direct observation.

Description of sites

Two sites were used for this study: Unit A, in a general hospital (open ICU) and Unit B, in a trauma centre (closed ICU). The observation was conducted by a team of three ergonomists. Before going to the study sites, two of the team members had participated in an observational session in a superregional PC centre[2] to familiarize themselves with EoLPC. A total of 14 nurses were observed—five at Unit A and nine at Unit B—for a total of 179 hours distributed over 30 shifts (Table 4, Appendix A).

Reduction and initial categorization of data

For each chronicle involving an EoL case (n=8), the data were reduced to extract those related to the EoL case. The data were then grouped in sequences, from the decision to stop treatment up to the patient's death. For each EoL case, a self-confrontation interview was conducted with the nurse in question. During this interview, lasting about 30 minutes, the nurse was

[2] Maison Michel-Sarrazin, a private non-profit hospital located in Québec City specializing in palliative care. *www.**michel-sarrazin**.ca*

asked to comment on her activity and to explain some of the things that came up during the chronicle. To conclude, the nurse was asked, "What was difficult about that day?" and "What was satisfying about that day?" The interview was transcribed and the comments added to the chronicle in question. The corpus of data was then subjected to a category analysis.

Observations and issues reported by nurses

The main categories of observations are as follows: the nurse and her activity; factors that make the nurse's activity a source of difficulty or of satisfaction; conflicting demands, some of which have to do with values; and strategies developed for coping with difficulties.

The nurse and her activity

It was observed that the nurse's activity involves multitasking, being interrupted frequently, having to be one step ahead, frequently being in wait mode, facing uncertainty and working in two different modes simultaneously.

Multitasking. Nurses were observed to carry out technical tasks (curing) alongside relational tasks (caring), not to mention administrative ones. The technical tasks are sophisticated—especially in a trauma unit, as indicated by the ratio of two patients to one nurse. Unlike in other hospital wards, nurses also attend to the patient's hygiene needs. As for relational tasks, they are largely focused on the family, since the patient is often unconscious. Throughout the day, the nurse must also relay information back and forth between the medical team, the family and other services. At the start of her shift, she reads the report of the nurse from the previous shift, and at the end of her shift she in turn transmits the information to the next nurse. Working in EoL care also requires a knowledge of particular procedures, such as preparation of the body, sending it to the morgue, and what to do in the case of organ donation or autopsy. Preparing doses of medication in the pharmacy involves filling out forms, as does sending samples to the laboratory, which in addition requires the printing of labels at the nursing station. What's more, the nurse must sometimes train someone who is new on the job. Certain variations related to the shift were noted: for example, nurses on the day shift have to take patients to other parts of the hospital for examinations and tests. Such examinations are rare on the evening shift, but visitors are more numerous.

Frequent interruptions and waiting. The nurse is frequently interrupted. This is mainly due to the demands of teamwork: responding to an alarm, answering the telephone, answering questions from visitors, assisting a co-worker, and giving directions to family members or personnel from other units. In addition, she is often waiting: for the doctor, for results, for medication, for the orderly who is busy elsewhere and unable to come and help her. When it comes time to transition to "comfort care,"[3] there is a period during which the nurse waits for a decision from the physician and then from the family. Interruptions and wait times add to the load.

Being one step ahead. In both of the units observed, it was noted that nurses, while providing care, were always aware that a severe case could be admitted any minute. In fact, during quiet times they would prepare material such as IV bags or forms to have on hand. They were sometimes worried about "wrong patients" being a "burden" on the unit; that is, they seemed to have adopted the institution's idea that ICU beds must be reserved exclusively for critical cases. We saw nurses trying to find beds for patients in other wards of the hospital.

[3] In both of the units observed, the care given to a patient after cessation of treatment is never called "palliative care" but rather "comfort care."

Dealing with uncertainty. Uncertainty is inherent in nursing practice, mainly due to patient instability. When transitioning a patient to comfort care, the nurse must manage uncertainty about when death will occur—which is a concern not only for loved ones but also for the hospital unit, since knowing the expected time of death is important for determining personnel distribution on the next shift, availability of beds, etc. The nurse must also deal with her own uncertainty about the patient's comfort, one of her primary aims being to prevent the patient from suffering. And the care to be given is another source of uncertainty: not knowing whether one has given the right doses, not knowing how to prepare a dead body or how to proceed in the case of organ donation.

Two-mode, mixed approach. Most of the time, the nurse works with one EoL patient and, simultaneously, with one patient who need specialized care. Nurses themselves talk about working in two modes: intensive care, which is survival-oriented and requires rapid action; and EoL care, which is slower and requires a lot of waiting.

Factors that make the nurse's activity a source of difficulty or satisfaction

After a shift involving an EoL case, if you ask a nurse what she found difficult and what she found satisfying, she will refer to certain factors. As shown in Table 5 (Appendix A), any particular factor can be a source of difficulty or satisfaction. These factors can be grouped into three main categories: relations with the patient and family; relations with other team members; and work organization.

Relations with the patient and family. In the case of a "good death," i.e., when the nurse has the impression that the care given has spared the patient from suffering, or that the patient was ready to die, this is a source of satisfaction. Conversely, if there is doubt as to the quality of the comfort care given, the nurse experiences difficulty and may carry the situation with her when she goes home (moral stressor). The issue here is the quality of work: if the work is well done, the patient will not have suffered.

Although relations with a patient's loved ones can be a source of difficulty, such as when family members make demands (higher doses of medication, for instance) or are undecided (whether or not to stop treatment), they can also be a source of satisfaction (recognition as manifested by hugging or expressions of gratitude). Satisfaction can also stem from the feeling that the nurse has helped the family by seeing to their needs and that they are at peace with the decision to stop treatment. Finally, announcing the patient's death and perceiving the family's sense of relief is also experienced as satisfying. These same events can be sources of discomfort, however. A nurse can sometimes have the impression that family members are using her as a punching bag, taking out their frustration with the healthcare system or their distress about death.

Relations with other team members. Relations with doctors are a source of satisfaction when the nurse feels that she is part of the team, that her expertise is acknowledged, and that she and the physician agree on the care to be given. Some doctors value the nurse's opinion, especially if the doctor is young and the nurse is experienced. By contrast, many nurses say that a major source of difficulty is the feeling that their competencies are not recognized. This gives rise to strategies by which they try to influence the doctor without appearing to do so. Some have made an art of getting a physician to change his mind and making him believe it was his idea. A physician who is uncomfortable with the idea of comfort care is also a source of difficulty, in particular when the family wants to stop treatment. In the unit where the patients are under the care of the attending physician (open ICU) rather than an intensivist (closed ICU), we witnessed a situation where one doctor questioned another doctor's decision to switch to comfort care. The nurse, who was aware of

the family's wishes, found herself in an awkward position.

Unlike relations with doctors, relations between nurses are rarely mentioned as a source of difficulty. Nevertheless, nurses admit that they sometimes have their differences regarding whether to administer comfort care, when to do so, and the doses to use. In this study, nurses reported feeling judged by their peers about the way they administered pain medication, and this was described as a difficult moment in an EoL case.

Work organization. As in any work situation, organization is a determining factor. Being able to take time to explain the situation to the patient's family and to be involved in making decisions with the physician and the family is a source of job satisfaction. When these conditions are present, the organization of work and care seems compatible with the pace required by EoLPC. This is made possible by teamwork, which enables a nurse to concentrate on the patient receiving comfort care. On the other hand, when nurses did not master certain procedures such as those related to autopsies or organ donations, this gave rise to difficult moments in some of the EoL cases observed.

Conflicting demands, including value conflicts

Beyond what nurses had to say about the difficulties of dealing with EoL cases, the data gathered point to problems stemming from contradictory demands placed on nurses. Very often the nurse has to reconcile conflicting concerns. When there is a conflict of values, as in the situations described below, the result is a moral stressor (Study 3).

Having to administer treatment although it seems futile, or when the transition to comfort care is postponed because the family has not yet given authorization. This situation was observed many times: a nurse must carry out the doctor's orders even though it goes against her values and her perception of the patient's condition and the family's wishes. Between the time the decision to stop treatment is made and the time it is implemented, there can be delays due to discussions between the doctor and the family or among family members. Even if the nurse knows, because of her closeness to the patient or her bonds with the family, that it is time for treatment to stop and for the patient to die, she must nevertheless prolong the patient's life through interventions she feels are futile.

To prevent suffering for the dying patient and to support the family while continuing to provide intensive care for another patient. When administering EoL care, the nurse is primarily concerned that *her* patient should not suffer and that the family should have the necessary support. If the patient has no friends or family, the nurse will provide a constant presence, and the entire team—including the assistant head nurse—will enable this by taking charge of the nurse's other patient and regularly checking on her emotional state. Sometimes the family is very large and the nurse will accept more visitors than hospital regulations allow, provided she still has enough room to do her job. When family members are visiting, there is the question of whether or not to leave them alone.

To ensure continuity of care for the EoL patient, even if the nurse must postpone her break or mealtime. More than once, we observed nurses taking time to make sure their replacement knew the patient, even if this meant postponing their break or mealtime until they could be replaced by a nurse who was familiar to the patient. This act of ensuring continuity is a source of satisfaction for many nurses.

To avoid rushing things, while keeping in mind the need to free up beds. Nurses try not to rush the family or precipitate the patient's death, but are always aware of the need to free up beds.

For example, they sometimes have to decide whether to keep the patient in the ICU—where the family members know the nurses—or find the patient a room elsewhere for the duration of the comfort care, and even after death so that the family can spend a little time with the deceased. At the same time, the nurse is aware that the patient could die during transfer. She is also concerned with not accelerating death when giving medication or bathing the patient. Other conflicting demands were observed: sometimes the family wants dosages increased but the nurse thinks they are already sufficient. Nurses try to organize their time as best they can, given their many duties; for this reason, they will keep the patient's heart monitor on so they can see when death is imminent ... but then they feel uncomfortable for the family, who might find the monitor disturbing.

Strategies for coping with difficulties

Nurses have strategies and unwritten rules for dealing with difficulties and conflicting demands. There are two types of strategies: team and individual (the latter being tactics that a nurse has developed with experience and that she will sometimes share with her co-workers).

Team strategies. Certain practices, though unofficial, seem to have been adopted by all the nurses and in some cases by the entire team, including orderlies and respiratory therapists. In both ICUs, we noted that whenever a patient had to be turned or moved, it was done by two people. In addition to protecting employees' backs, this strategy builds solidarity: by helping a co-worker, they ensure that they will receive help in turn when needed. When the patient's family is present, the nurse is able to get away and offer assistance to co-workers. Similarly, when the family is absent, co-workers will take on some of the care needed by the other patient so that the nurse can remain with her EoL patient. Team members also help each other by circulating information and keeping each other up to date about the patients. Mutual assistance has no boundaries between professions; for example, an orderly will relay information between the family and the nurse. In addition, most of the nurses seemed willing to sacrifice their personal time if necessary; they would arrive early, leave late, postpone their breaks, and take phone calls from co-workers while at home. The assistant head nurse plays a key role in all these practices by being alert to the nurses' state of mind and changing their patient assignments when necessary. This concern for co-workers' emotional health can also be seen when nurses check to see if a new team member is able to cope with a situation such as having to prepare a body after death. Through mutual assistance, the team contributes to the quality of care and preserves the overall health of its members.

Individual strategies. Nurses were seen to use individual strategies to deal with specific problems, in particular in their relations with doctors and families. To stay informed about the patient's condition, a nurse will listen to what the doctor says to the family, even though she was not invited in on the conversation. When a decision has to be made about EoL care, a nurse might try to influence the doctor without appearing to do so. For example, if the nurse knows that the family is ready to accept treatment withdrawal but the doctor has not mentioned it, she will give certain information to the doctor so that the doctor will propose it. In some cases, more than one physician is involved. A doctor might arrive in the morning and question the level of "comfort care" decided on during the night by another doctor, even though the family has agreed and the nurse has already begun administering the dosage ordered. She thus finds herself in a tug-of-war between the family and the doctor and confronted by a sense of meaninglessness. In such a situation, we noted that the nurse stayed out of the debate and instead had the two physicians talk to each other and explain their reasoning. It was also observed that some nurses, aware that the transition to EoL care involves a risk of lawsuit, made written notes on all their actions in the patient's file.

It can be difficult for the nurse to determine whether the family wants her present or prefers to be left alone with the patient. One nurse was seen to clarify the situation by asking the family outright what they wanted. Some nurses try to manage their own distress by keeping a certain distance from the patient's loved ones, for example when they talk about themselves. Such strategies seem to enable nurses to provide high-quality care while protecting themselves from emotional demands.

To sum up, the results of Study 2 show that the work of an ICU nurse involves multitasking, frequent interruptions, having to wait, dealing with uncertainty, staying one step ahead, and working in two different modes. The difficulties encountered by nurses working in EoLPC are mainly linked to relations with physicians, the patient and the family, as well as to work organization. Paradoxically, these same factors can also be sources of job satisfaction. Nurses deal with difficulties by using individual and team strategies to deliver high-quality care, which gives meaning to their work. While some of these strategies have a cost in terms of the nurse's well-being (e.g., reduced time off), other factors in the organizational context can attenuate the difficulties and help support the strategies used to improve job satisfaction.

RESULTS OF STUDY 3

Through in-depth individual interviews, Study 3 offers a close look at the ethical dilemmas underlying moral stressors.

Description of sample group

The study sample was made up of 28 nurses (25 female, 3 male). Seventeen of them had a college diploma, nine had a Bachelor's degree, one had a certificate in EoL care, and one had a graduate diploma in management. Most were in the 25–42 age bracket, but four were between 43 and 48 years old, five were 49–54 and two were 55–60. Seventeen had 1 to 17 years of experience, five had more than 18 years and six had over 30 years.

Description of ethical dilemmas

First, a content analysis was conducted on the basis of the definitions used to describe the ethical dilemmas experienced by nurses. An *unresolved dilemma* is a situation in which the nurse must violate one of her personal values; for example, respect for human dignity. A nurse is sometimes forced to sacrifice the patient's dignity in a work situation, and this results in an unresolved dilemma. Next, we investigated the mode of resolution (i.e., the means by which the principal conflict of values was resolved). The results were presented, in the form of a workshop, to a group of experts including clinicians (nurses and doctors), decision makers (managers and administrators from various authorities and institutions) and researchers from various disciplines (medicine, psychology, nursing, social services, industrial relations and theology) specializing in PC. The workshop made it possible to identify certain contextual elements of the participating hospitals and to better understand how ethical dilemmas are experienced by nurses. Such dilemmas stem from two clinical situations: futile medical care and withdrawal of treatment.

Futile medical care

"Futile medical care" (or "therapeutic obstinacy") is a term used to express the opinion that the treatments being given are out of proportion to the possible benefits and to the human and material costs to the patient. It is an ethical judgment that expresses disagreement with the medical course of action taken. Its use indicates a conflict of values between the medical corps and those who would describe the clinical reality experienced by the patient as "futile."

For eight of the nurses (29.6%), futile medical care is wrong and brings up an ethical

dilemma. They find themselves in this dilemma because they must decide whether or not to implement a treatment plan that creates a conflict of values.

> They were doing too much, the patient was suffering too much, it was uncalled for given his age and condition. They did so many things to the poor man, who was paralyzed—he could only move his eyes and his mouth. He had intestinal necrosis and they operated on him. He had tubes everywhere, they did a tracheotomy and a lot of other interventions. He suffered so much. He had a lot of operations. I felt sorry for him; I could have defended him by speaking up. All he could do was look at us. It's terrible, what they did to him. I wouldn't wish that on anybody. (ICU nurse)(Our translation)

Nurses say they experience tension because they see certain measures as futile while other people deem them appropriate. Indeed, some people do not think in terms of futility but rather of sustaining life at all costs—the main objective in an ICU—regardless of the patient's age or condition. For nurses in this dilemma, "at all costs" opens the way to what they see as futile medical care. Here we have two conflicting values: one that nurses say they all share on a personal and professional level, namely, respect for the patient's dignity; and the other linked to ICU organizational culture, namely, keeping the patient alive at all costs... even if the patient is suffering. This is in opposition to nurses' conception of respecting dignity. They feel that if a patient is very weak and in pain, to persist in putting that person through more trials—tracheotomy, operations, repeated intubations—exceeds the boundaries of what is reasonable. The practice of nursing is informed by a respect for human dignity, which by its very nature elicits actions that are rooted in human relations and an ethic of caring. By identifying and naming futile medical care, i.e., treatment that goes beyond what is reasonable, nurses have pinpointed an ethical dilemma. "We're the ones who are close to the patients, who see them every day, who know what they've been through and who have come to know them." (ICU nurse)(Our translation)

Resolution of dilemmas stemming from futile medical care

Nurses are incapable of resolving this dilemma, since they cannot act according to their values. During the interviews, they talked about the relationships they develop and the closeness that nurtures those relationships. In this way, they expressed the value they would have liked to uphold—namely, the patient's dignity—but were unable to. The technologies and equipment deployed on the patient create a distance, making it easy to forget about the human being who is suffering.

Nurses feel trapped by ICU logic; they become technicians, executing tasks that are devoid of meaning or any sense of caring. They are incapable of viewing themselves as moral agents. There is a professional disconnect that generates a sense of meaninglessness. Added to this is the inability to defend their patients by speaking up for them: after fruitless attempts to talk to the physician, they feel ignored and frustrated, and are filled with moral indignation. If they are unable to act in the patient's best interests due to lack of authority or resources, they feel guilty and incompetent when they think about what they could have done.

Treatment withdrawal and euthanasia

First, an explanation of the concepts is in order. At the opposite end from futile medical care (in which death is postponed through endless interventions) is withdrawal of treatment, which clinically can result in acceleration of death and be perceived as euthanasia, another source of ethical dilemma. Euthanasia, however, involves an intervention meant to accelerate death, an action with a deliberate intent to put an end to a person's life, whereas in treatment withdrawal the

illness is simply allowed to take its course and death is allowed to happen. Any medication administered during treatment withdrawal is not intended to accelerate death but to relieve the discomfort due to cessation of a life-supporting measure such as a respirator. In euthanasia, on the other hand, death results from administering a lethal dose of a drug. The line between treatment withdrawal and euthanasia can be a thin one at times, since the former often involves administering medication that can be lethal depending on the dosage, such as the sedatives or opiate analgesics frequently prescribed to relieve suffering. One distinction is that treatment withdrawal is legal whereas euthanasia is not. A person has the right to refuse life-prolonging treatments, and this freedom of choice takes precedence over the technical possibility of sustaining life through interventions. The decision to stop treatment must be an informed choice, made freely and without coercion. For nurses, treatment withdrawal can cause as much of an ethical dilemma as euthanasia (since it can sometimes be perceived as amounting to the same thing). Clearly, nurses are aware that their actions in this regard can be problematic and rife with consequences, both ethical and legal. The nurses in this study seemed very hesitant to talk about the dilemmas they experience as a result of this clinical reality; in fact, they did not even want to mention euthanasia or any practice resembling it. Some waited until the interview was over and the recorder was turned off. Note that distinguishing between treatment withdrawal and euthanasia was not among the objectives of this study.

Six nurses had experienced a dilemma related to this subject. Four of the cases involved treatment withdrawal authorized by the family when the patient was not in a condition to give consent. Although this is perfectly legal, nurses in such a situation experience an ethical dilemma because they often associate withdrawal with a practice resembling euthanasia (simultaneous administration of certain drugs). Their dilemma highlights three values: following doctor's orders, moral responsibility when carrying out certain actions, and respect for life. The first is organizational while the other two are professional and personal. The value used to justify the nurse's action is the organizational one: following doctor's orders. But the nurse's conscience makes it difficult. While administering the medication, she feels alone, left to carry out unaided an act she sees as troubling and having serious consequences.

> The patient was a woman about my age, in her fifties. Nothing more could be done for her. A decision was made: it would happen that day. The resident told me to give her medication; she was already getting some through IV infusion, but it was not enough. I gave her Fentanyl. I went through two boxes of ten vials each, but I broke two, so that means I gave her 18 vials of Fentanyl in the space of an hour. I filled the syringe and I was the one pushing on the plunger... that's the part that really bothered me. The resident was watching the monitor and saying, "I don't want her to breathe faster, give her 50 milligrams, give her 3 cc's, give her more, give her more," and I could hardly keep up. After 20 minutes it was over. I found that one really hard. I said to the other nurses, that was euthanasia. (ICU nurse)(Our translation)

There were two such cases involving situations of perceived euthanasia. Here is the other one:

> The problem was that the patient was not dying quickly enough according to the doctor. He wanted to go home, so he wanted the process to be accelerated. He had us increase the IV doses of morphine every five minutes. I started with one milligram an hour, then six and then 20. We were up to 325 cc's an hour; to me that's not palliative care, that's euthanasia. And I was the one pressing on the plunger, I was the one increasing the IV flow rate. (ICU nurse)(Our translation)

The nurse experienced an ethical dilemma while performing an act that would end a patient's life. She administered fatal doses of a drug under the doctor's orders even though she

disagreed. She had reservations about the doctor's intentions; she describes him as appearing to want the end to come as soon as possible, and having little concern for the patient's comfort. This is contrary to what nurses would call good practice, i.e., accompanying a dying patient and preserving his or her dignity without causing death.

Resolution of ethical dilemmas stemming from treatment withdrawal or euthanasia

As in the case of futile medical care, the ethical dilemma stemming from treatment withdrawal remains unresolved for this group of nurses. Their intention is to choose the third value, which corresponds to the way they would like to practise their profession. But time is not on their side. They cannot step back long enough to grasp their moral conflict or discuss it with anyone. They therefore resolve the dilemma, partially and temporarily, in favour of the organization and at the expense of their own professional ethics.

It must be emphasized that the acts of euthanasia perceived by the nurses take place within the context of the decision-making process for treatment withdrawal. The nurses do not take part in the deliberations or decisions of the doctors and family, and are not privy to all the reasons justifying the decision to stop treatment. They are simply presented with a done deal, and they must stop the treatment and administer the prescribed doses of sedatives or powerful analgesics such as opiates. This makes them feel like executioners. Typical comments are "I feel like the Grim Reaper," or "I'm the one performing the act that will end the patient's life." (ICU nurse)(Our translation)

Three other ethical dilemmas were mentioned: (a) being powerless to relieve the patient's suffering, either because the prescription is difficult to obtain from the doctor or because the doctor does not believe in comfort care. The patient or the family might also have religious reasons for refusing comfort care, such as the expiation of sins; (b) being unable to have the patient's wishes respected. Because the nurse spends considerable time with the patient, she usually knows whether the patient wants to continue treatment or not (e.g., refusing intubation), but she is unable to express this to the doctors, who are intent on sustaining life at all costs; (c) not being forthright with the family about the patient's real condition, or even lying about it. Nurses would like to tell the family the truth so they can prepare themselves for their loved one's death; however, they are sometimes prevented from doing so by the doctors, who prefer to say as little as possible to the family. And there are other moral stressors: absence of any protocol for EoL care, which makes the task more difficult; errors noted by peers in the application of protocols; families intervening in the nurse's work; and other people not doing their job. The ethical dilemmas listed here are nevertheless isolated cases.

To sum up, Study 3 shows the presence of ethical dilemmas stemming from futile medical care or from the withdrawal of treatment, which is sometimes confused with euthanasia. Other dilemmas were mentioned in connection with powerlessness or with lack of respect or truthfulness. Most of the dilemmas remain unresolved. Some of the obstacles to resolving them lie in the nurses' difficulty in speaking about them and finding meaning where the nurses see none in terms of their professional and even personal ethics. The result is a symbolic rupture. These dilemmas collide with the nurses' personal beliefs, and many nurses have had to do things that went against their professional conscience. Because the dilemmas remain unresolved, they result in ethical distress. Nurses report the following effects: demotivation, health problems (depression and insomnia), feelings of meaninglessness at work, demoralization, withdrawal and a troubled conscience.

RESULTS OF STUDY 4

In light of the ethical suffering observed, a fourth study was conducted with the aim of gathering managers' opinions about how organizations might support nurses in the resolution of their ethical dilemmas.

Description of sample group

Twenty-one managers (15 women and 6 men) having a direct connection to the nurses in Study 3 volunteered to participate in Study 4, depending on their availability. There were two critical-care unit directors, one critical-care unit co-director, three intensive-care unit directors, one nursing practice advisor, one intensivist, five nursing care managers, four assistant nursing care managers and four professional services managers.

Support measures as described by managers

An analysis of the results yielded three themes.

Managers' ethical sensitivity

First of all, managers recognize ethical suffering and are themselves sensitive to ethical issues. Some describe the nurses as resilient, although their resilience is considered fragile. Managers are also aware of the difference in sensibility between doctors and nurses. They explain it by saying that the nurse is at the patient's bedside every day, whereas the work of most doctors does not allow this special connection.

Lack of support

Second, managers admit to a lack of solutions. Despite their ethical sensibility, two different discourses are heard: acknowledgment of the ethical dilemmas and suffering on the one hand, and a seeming inability to come up with any structural or organizational solutions on the other hand. All the managers interviewed in this study expressed a wish for solutions, but most (64%) did not know what kind of support to provide, nor did they have the means to do so. They noted that clinical ethics committees are not an effective solution, since none of the nurses use them. Nurses cannot relate to the structuring or institutionalization of ethics at work, as conceived by such committees. Moreover, they have doubts about the way the committees operate, and the response time is too long to be of help in a given situation. For many managers, these committees do not seem very active or visible; their role and mission are little known or misunderstood. There is a lack of consistency with regard to ethical objectives in terms of personal experience. Even though a form of institutional ethics has penetrated the organizational cultures of some health establishments through ethics committees, it must be acknowledged that the support needed by nurses does not come from these committees, is difficult to transform into concrete measures and remains limited in extent.

At an organizational level, there are other dysfunctional elements: difficulty in distinguishing between ethical and legal matters; lack of training on ethics; vagueness of the governance and mission of the ethics committee; and lack of protocols or clinical practice guidelines for EoL cases, which makes it difficult to obtain a consensus on certain aspects and leads to confusion between protocol and form when it comes to establishing the level of care.

Exploring solutions in two establishments

Third, managers from two of the five establishments talked about measures that might constitute a way to assist nurses experiencing ethical dilemmas. In each of these establishments, there is a resource—an ethicist or a health professional trained in bioethics—available on demand

and capable of responding rapidly to nurses' questions. However, the managers did not provide any data on whether ICU nurses were making use of this resource.

These two establishments have also set up training on the ethical risks inherent in professional practice. In addition, their managers mentioned that there are facilities for peer-to-peer exchanges on ethical dilemmas and issues. Ethical issues are usually brought in by interprofessional teams, who work together to achieve an objective view. However, the effectiveness of these measures in helping nurses resolve their ethical dilemmas has not been documented.

To sum up, managers recognize ethical dilemmas and are sensitive to ethical distress. They are aware of the inefficacy of clinical ethics committees as a support measure but have few alternatives to suggest. Two establishments have set up support measures by offering the services of a clinical ethicist and training on ethical risks. However, the efficacy of these measures has not been documented, and not one of the nurses working at these two establishments made any mention of them during the interviews in Study 3 on moral stressors and ethical dilemmas.

So far, the first four studies have been descriptive and have yielded a better understanding of the demands and resources associated with EoLPC based on a mixed approach (curative/palliative) pushed to its extreme in intensive-care units. The last study picks up on several of the points raised.

RESULTS OF STUDY 5

Description of sample group

A total of 870 nurses answered the questionnaires, either online (54%) or on paper (46%), for a response rate of 24.8%. Of the completed questionnaires, 751 met the criteria for inclusion in the study. A description of the sample is provided in Table 6 (Appendix A). The average age of the participants was 41 (SD = 11) and they had an average 17.5 years of nursing experience (SD = 11). Their fields of practice were as follows: home care (42.3%), critical care (33.2%), oncological care (15.3%) and palliative care (9.2%). They worked in hospitals (52%), in people's homes (44.2%) and in hospices (3.8%). The majority were women (92.5%) working full time (66.9%) and holding a Bachelor's degree (71.2%).

Description of variables. Table 7 (Appendix A) provides descriptive data for each of the variables in the enriched model of occupational stress shown in Figure 2 (Appendix A). Internal consistency was assessed by means of Cronbach's alpha to determine the fidelity of the various instruments used in this study.

Random division of sample. As is standard practice during empirical verification of a theoretical model using structural equation analysis, the sample was first randomly divided into two subsamples of equal size (n = 376 and n = 375). Multivariate tests were conducted, and no statistically significant difference was found between the two subsamples, either for the model indicators or for various sociodemographic variables.

Measurement model. First of all, exploratory and confirmatory factor analyses were conducted to assess whether the measurement model fit the data. The enriched model of occupational stress, shown in Figure 2 (Appendix A), has a total of 11 factors (nine first-order and two second-order [demands/resources]). The second-order factors were not considered in these analyses, since the structure is hierarchical and not directly based on any indicator. The *Meaningfulness* factor was also excluded at first, because it was not part of the first integrative occupational stress model (Figure 1, Appendix A). An eight-factor solution was expected by the

researchers.

The exploratory factor analysis did not support the expected theoretical distribution, as shown in Figure 2 (Appendix A). Only the dependent variables seemed to form a coherent factor, with fit indices exceeding 0.30.

Confirmatory factor analysis is aimed at determining a satisfactory measurement model that can account for the data distribution. As one might expect based on the exploratory factor analyses, Table 8 (Appendix A) shows that Model A does not have adequate fit indices. The enriched factor structure therefore had to be be reworked.

Review of model variables. The researchers reviewed the theoretical pertinence of each indicator making up the eight factors in the model to be tested, in light of their assessment of psychosocial occupational factors and the publication of a French report proposing a classification of these factors.[40] Four variables were removed, as they were seen to be redundant. Six more were subtracted on the basis of the *a posteriori* modifications proposed by Mplus version 6.11. Finally, the total score from the Nurse Job Satisfaction Scale (NJSS) was used, rather than the scores from two of its three subscales; this resulted in removal of another variable, for a total of 11 removed. Additional analysis of the NJSS has revealed uncertainty about the number of subscales (paper by Geneviève Roch, currently in preparation).

Review of model factors. Removal of 11 variables led the researchers to eliminate two of the original eight factors (Figure 2, Appendix A)—professional demands and personal resources—and to revisit the other factors in light of the categories proposed in the French report.[40] "Organizational Demands" was split into two factors: (1) Work intensity (demands and effort) and (2) Shortage of resources (human, material and communication resources). Similarly, "Organizational Resources" became (4) Autonomy, and "Professional Resources" became (5) Social relations. In short, the original eight-factor model was slightly modified and became the seven-factor (Model B). The results, presented in Table 8 (Appendix A), showed a clear improvement in fit indices. However, certain variables had a pattern coefficient of less than 0.70; these were removed and another seven-factor model (Model C) was tested. The results of the confirmatory factor analysis of Model C are shown in Table 8 (Appendix A). Fit indices for Model C are all excellent. All pattern coefficients are 0.70 or higher, which means at least 50% of the factor variance is explained. In this way, a highly satisfactory measurement model was obtained.

Addition of Meaningfulness. In the final step, the *Meaningfulness* factor was added to the measurement model (Model D). The results are presented in Table 9 (Appendix A). The variables *Importance* and *Coherence* make up the *Meaningfulness* factor. The other two were eliminated because they had pattern coefficients of less than 0.70. Note, however, that two of the three theoretical aspects of the concept (*Importance* and *Coherence*) remain well represented in the measurement. With the addition of *Meaningfulness* as the eighth factor, Model D is a good fit: all fit indices meet the criteria established for this study. The pattern coefficients are all greater than 0.70, and the correlations between factors show high discriminant validity. Having established Model D as satisfactory, the researchers were able to proceed with validation of their proposed structural model of stress.

Structural model. Once a satisfactory measurement model was obtained, the researchers proceeded with the main objective of the study, namely, predicting nurses' job satisfaction and emotional distress. The fit indices for the first half of the sample (n = 376) were adequate: χ^2 (64) = 93.45, p = 0.01, χ^2/df = 1.46, RMSEA = 0.035 [0.018-0.050], CFI = 0.985 and SRMR = 0.035. The final model for occupational stress is shown in Figure 4 (Appendix A). It is a hybrid model, with both structural and measurement (factor) components. Figure 4 (Appendix A) shows standardized pattern coefficients for the measurement component and standardized path coefficients for the structural component. All coefficients are statistically significant, $p < 0.05$. Note that distress, staff shortages and emotional demands each have only a single indicator. To assess the accuracy of the model, a coefficient of internal consistency (Cronbach's alpha) was used to calculate the error variance for the indicators of each factor. To validate the structural part, the value of χ^2 in the hybrid model must be subtracted from that in the factor model. This gives a value of χ^2 (12) = 18.099, p = 0.11, which again constitutes a very acceptable fit index.

Explanation of job satisfaction and well-being. This hybrid model explains 81.4% of the variance in job satisfaction and 41% of the variance in distress. Staff shortages are the main predictive factor for both job satisfaction and emotional distress. Emotional demands are another predictor for emotional distress. The greater capacity of the enriched model to explain job satisfaction and well-being, compared with the initial model, has thus been verified.

Meaningfulness as a mediator between nurses' Autonomy and Job Satisfaction. With the addition of *Meaningfulness*, the correlation between *Autonomy* and *Job Satisfaction* becomes weaker because *Meaningfulness* mediates between the two, as demonstrated by the Sobel test: z = 9.99, $p < 0.001$, a significant value that supports the hypothesis of a mediating effect. In concrete terms, nurses with greater autonomy have a greater sense of meaningfulness, which in turn leads to greater job satisfaction.

The model also includes the factors *Work intensity* and *Social hindrance*. These contribute to the occupational stress model, as illustrated by the correlations associating them with the other predictive factors in the model. However, they do not have any direct link with the dependent variables (*Job Satisfaction* and *Distress*). Although they are not causal factors, it is useful to consider them so that they can be better explained by the factors *Autonomy*, *Staffing resources* and *Emotional demands*.

Validation of final model. As is standard practice, the approach was exploratory, and the final hybrid model was also tested on the other half of the sample (n = 375). The fit indices once again proved adequate, meeting the study criteria: χ^2 (119) = 228.206, p = 0.00, χ^2/df = 1.92, RMSEA = 0.049 [0.040-0.059], CFI = 0.935, SRMR = 0.075. Again, the model explained 81% of the variance in job satisfaction and 41% of the distress. This second validation thus corroborates the results obtained with the first half of the sample group.

4. DISCUSSION AND INTEGRATION

The purpose of this project was to improve the context in which EoLPC is provided by developing and testing a model that could lead to better understanding of nurses' job satisfaction and well-being. The main objective of the project was achieved with Study 5. Both initial hypotheses—(1) the enriched model will explain more than the initial model; and (2) *Meaning at work* acts as a mediator—were verified by the final model developed with the first half of the sample and validated with the second half.

The enriched model explains more than 80% of the variance in nurses' job satisfaction and 40% of the variance in distress, whereas the initial model explained about 40% of the variance in job satisfaction and 25% of the variance in distress. In addition to work intensity, a factor often mentioned to explain job dissatisfaction or distress, staffing shortages seem to be the main risk factor, for both job dissatisfaction and distress. Work intensity, however, correlates strongly with staffing shortages ($r = 0.63$) and moderately with emotional demand ($r = 0.47$). Staffing shortages correlate negatively with quality of social relations within the team. This suggests that shortage of qualified staff, particularly when the work atmosphere is less than ideal and the work is demanding, has a negative impact on nurses' job satisfaction and increases their distress. Greater emotional demand (in this case essentially the distress of patients and their families) also explains the greater distress experience by the nurses.

Meaning at work mediates between a nurse's autonomy and job satisfaction. Adding the *Meaningfulness* factor eliminates the direct correlation between *Autonomy* and the dependent variable *Job satisfaction*. In other words, before *Meaningfulness* was introduced, a direct correlation between lack of autonomy and low job satisfaction was noted among nurses. When *Meaningfulness* was added, the correlation between *Autonomy* and *Job satisfaction* was not as strong. One degree more or less of autonomy will account for one degree more or less of job satisfaction, depending on the amount of perceived Meaning at work. Allowing a nurse more autonomy helps increase meaning at work, which has a positive impact on job satisfaction. A nurse with more control over her work and its organization can invest in what she considers important—often meaning being able to offer quality care and helping to relieve the suffering of patients and their families, according to the ergonomic study. As explained earlier, meaning at work as defined in this model involves not only the nurse's perception of the importance of the work but also coherence between the nurse's actions and her values.

The enriched model is consistent with the six risk factors outlined in the recent report issued by the ministry of labour in France.[40] In fact, three of the six risk factors are included in our model as predictors: autonomy, work intensity (in this population best indicated by staff shortages) and emotional demand. Two other factors contribute indirectly to the enriched model: ethical distress, often experienced in cases of conflict or poor match with values (loss of meaning); and social relationships (team functioning and support). A literature review, qualitative studies and workshop discussions all helped enrich the model. In addition, the model proved helpful in discussing and integrating the results of the qualitative studies.

DISCUSSION OF RESULTS OF STUDY 1

Stressors associated with nursing practice in EoLPC in an ICU seem similar to those described in our earlier work by nurses working in oncology and PC as well as in the literature review by Espinosa et al.[62] Although the three categories of stressors are present and seem to

interact, the nurses reported more organizational stressors. The heaviest stress burden, according to the focus groups, was not being exposed to death or managing this EoL stage but rather having to fight to obtain the human and physical resources that would allow the nurse to offer humane, quality care for the patient and his/her family.

Among the organizational stressors—and this is consistent with the findings of a recent ethnographic study of ICUs[97]—the biggest stressor and the one that contributed to all other sources of stress was the lack of recognition of EoLPC in ICU culture. EoLPC should be considered a normal stage in life and be better integrated in the care plan for patients and families.

As for professional stressors, they were associated, in part, with lack of training to develop competency in providing EoLPC.[10,98,99] Given that people die in ICUs, the nurses, like the other professionals comprising the caregiving team, clearly need to provide this type of care and require education to help them to do so.[100] This would reduce other professional stressors mentioned by the ICU nurses, including managing EoL symptoms and effective communication with families and the medical team.[11,61]

The categories of stressors suggested are not mutually exclusive. In fact, they are related. Emotional stressors in particular seem to be fed by the other two categories of stressors. Study 3 also shows that nurses experience moral conflict when they must continue treatments they consider futile or unnecessary.[10,62] Encouraging withdrawal of treatment or deciding not to initiate aggressive therapies would help in reducing this moral distress [61] and prevent the ethical suffering described in Study 3. Last, the nurses' feeling of abandonment when treatment is withdrawn could be reduced if they were more involved in decisions about the patient.[101]

An inhospitable setting for dying and a need to support the entire caregiving team

In sum, nurses find providing EoLPC in an ICU stressful, and they perceive it as difficult for the doctors they work with as well. The stressors the nurses mentioned contribute to their own suffering and distress. Given this distress and the need to improve the provision of EoLPC, we find it urgent to develop, implement and evaluate programs to support ICU nurses in providing quality EoLPC. In addition, as so much of the work of an ICU nurse is part of a team effort, it would be best if the entire team were involved in developing and implementing integrative programs for EoLPC in an ICU—especially as this study showed a correlation between quality of team work and social relations on the one hand and nurses' job satisfaction and distress on the other. Last, ensuring a time and place for exchanges (daily interdisciplinary reports, for example, involving all the different professionals who take part in providing EoLPC) would be beneficial and help consolidate the integration of these programs.

DISCUSSION OF RESULTS OF STUDY 2

Though closely related to Study 1, Study 2 looks at the sources of stress in an ICU from a different angle. Some of the findings of Study 2 are reported in a number of ergonomic studies in hospital settings.[102,103,104,105,106,107,108,109] The approach made it possible to develop an original model of the work situation of a nurse providing EoLPC in an ICU (Figure 3, Appendix A). In the centre is the nurse, with her values, skills, concerns and activity. The nurse's activity is affected by resources (shown in the four quadrants) provided by (1) the patient and his/her family; (2) the work team; (3) the work organization; and (4) the physical setting. The nurse's activity not only contributes to the quality of service but also affects the nurse's own health. And these two elements

are connected, because a nurse's well-being is associated with her perception of the quality of her work. For the nurse, the quality of her work with patients at the end of their lives is measured by meeting two key criteria: the patient must not suffer and the family be well supported.

To ensure quality care, the nurse relies on her skills and on an entire team. Recognition from the family is also a resource. Likewise, the organization of work and care may or may not provide support for the nurse. Last, the physical setting in the two units observed could be described as quite suitable for EoL care (recent renovations well adapted for intensive care) though there was inadequate space for family, allowing little room for privacy and compromising confidentiality (mentioned in Study 1 as well).

Possible improvements

The modelling was helpful in suggesting ways to improve the quality of service and the nurses' occupational health.

Work organization. In terms of work organization, three promising avenues emerged: type of unit (open or closed); the role of the assistant head nurse; and use of clinical practice guides to formalize comfort care in EoLPC. First, our observations suggest a closed ICU is more conducive to continuity of care than an open unit, and it also facilitates team work and allows the nurse to feel considered. Conditions in a closed unit seem more favourable to collaborative care. Doctors working in the closed unit are specialists in intensive care (intensivists) and seem to have a better understanding of EoL care and to be more comfortable with different types of medical prescriptions. This seemed reflected as well in the availability of medical equipment for EoL care. Second, the assistant head nurse can play a strategic role in problem solving, but this requires work organization flexibility—such as access to "surplus" experienced nurses to lend a hand as needed. Likewise, the way the team functions, allowing circulation and continuity of information on the condition of patients and their families as well as mutual assistance, can be a positive factor. Last, the organization of comfort care could be formalized more, like the organization of EoLPC, and supported by protocols serving as practice guides that would remove ambiguities—such as what medications to administer when withdrawal of treatment is imminent.

Direct support for nurses providing EoLPC. Another avenue to explore is clarification of the roles and skills required in the provision of EoLPC. This means involving nurses more in the process of making decisions on withdrawal of treatment, transfer to EoLPC and continuity of care. The term "comfort care" seems to diminish the expertise and competencies required to provide quality PC. Specialized training in EoLPC could be offered to nurses or the entire ICU team. Mastery of certain knowledge or know-how (such as distress identification and symptom management) could also be improved. Such measures might also help nurses to stop feeling responsible (about a patient suffering needlessly or perceived euthanasia, for example—ethical dilemmas described in Study 3) in case conflicting demands. In fact, this study, like Study 3, showed that difficult incidents and ethical suffering continue to haunt nurses after they leave work. In addition to technical knowledge about EoLPC, nurses could benefit from a forum for thought-provoking discussions that would help to break the silence, and the EoL care episodes observed could serve as material for case studies.

Like Study 1, this study shows that ICUs are not particularly hospitable settings for EoL care. Study 2, however, offers some clarifications, showing that nurses can find satisfaction in their work when they can count on the support of the care team (availability of qualified staff) and can connect with the families (a key source of recognition and of personally rewarding interactions). Some

strategies, however, are costly, eating into personal time, for example. Clarification of roles, training and case discussions to clarify roles and improve the skills of the nurses and the entire EoLPC team are also promising approaches. In sum, the criteria for quality work that leads to satisfaction with EoL care are (1) the patient does not suffer and 2) the family feels supported.

DISCUSSION OF RESULTS OF STUDY 3

Study 3 differed from studies 1 and 2 in that the focus was on moral stressors. This study looked at ethical dilemmas associated with the following stressors: perceived futile medical care, withdrawal of treatment or perceived euthanasia, suffering of another and feeling powerless to provide relief, failure to respect patient's wishes and lying about a patient's condition.

Ethical dilemmas and distress. As mentioned in the discussion of Study 1 and again in the discussion of Study 2, the sources of emotional stress seem to derive from organizational and professional stressors, including the lack of organizational directives on medical decision-making about level of care, treatment plan or EoL care guidelines. The sources of moral stress are related to the absence of an ethical roadmap when dealing with patients who are near death and the difficulty nurses have in speaking up when faced with an ethical dilemma. Nurses often have no place to talk about ethical issues, retreating instead into silence that can last for years; in fact, their sense of solitude is one of the themes that emerged from this study. The dilemmas a nurse faces are often associated with the fact that she is not consulted when a therapeutic plan is decided on. From the nurse's perspective, she has little decision-making power yet is asked to assume heavy responsibilities (administering lethal medication, for example). In addition, nurses feel completely unsupported when the time comes to perform an act that will end a life. This is a work situation where there is an imbalance between psychological demand, which is high ("causing death") and perceived degree of autonomy, which is low (nurses feel they cannot express their opinions freely).

Unresolved dilemmas and ethical distress

The results also show that nurses are mostly unable to resolve these dilemmas. They generally suspend their professional judgment and submit to medical authority, even when the latter may be mistaken. There is a perceived disconnect from values the nurse feels are important to uphold in critical situations (kindness, caring, respect, dignity). The perceived incongruence of the nurses' care values and their clinical acts undermines the meaning of their work and the satisfaction they get from doing it. These situations generally lead to ethical suffering, which causes detachment and loss of meaning at work. According to the French report cited in the literature review, moral or ethical distress is felt by a person who is obliged to act against his or her professional, social or personal values. Our results indicate that ethical suffering is also felt by a person who is unable to speak out about what he or she experiences or sees at work.[110]

DISCUSSION OF RESULTS OF STUDY 4

In Study 4, the dilemmas described above were reported to managers, who were then asked to explore organizational measures that might help the nurses prevent or resolve the dilemmas. The managers recognized the extent of ethical distress. However, they said that clinical ethics committees are ineffective in helping to resolve ethical dilemmas and they themselves had few solutions to suggest.

Managers' inability to find organizational support measures

Analysis of the study results suggests that the following three sources of tension, or management paradoxes, might explain the managers' inability to find organizational support measures.

Normativity and a place to talk/think things over. First, there seems little encouragement and little room in any of the organizations studied for creating spaces to talk/think things over and developing the ability to do so among caregiving staff. Only two of the five organizations offer services or training on the ethical risks of professional practice and informal spaces for discussion of ethical dilemmas. Though such spaces are essential, there are not enough of them and those available are hardly used by nurses, according to the findings of Study 3.

The individual and the team. Second, although moral dilemmas are generated within the healthcare team, they are experienced at an individual level. The absence of a shared system of reference makes it harder for managers to guide, support and ultimately legitimize actions to better support nurses experiencing ethical distress. Add to this the ambiguities of organizational benchmarks, which are often confusing and few in number. As indicated by the results of studies 1 and 2, the very definition of EoL care in the different ICUs has to go beyond comfort care, and EoL and care protocols need to be developed or adopted. This fragmentation within the organization also means nurses are more concerned about holding onto their role, and even their survival within the organization, to the detriment of solidarity among colleagues. The lack of interprofessional collaboration contributes to insular thinking, shoring up professional silos within the organization and fostering ethical suffering on the job.

Autonomy and accountability. Third, there is a paradox involving autonomy and accountability, resulting for the nurses in what could be termed autonomy under duress.[111] This is further complicated by a responsibility overload, which is often not shared—at least the moral dilemmas and the ethical distress. The new accountability demanded by the new public management[112] exposes employees to greater risks when suitable resources and support are not provided as well.

Two organizations took steps to deal with the problem of ethical dilemmas experienced by nurses but without much in the way of results. As described by the managers in these two hospitals, the support took the form of reinforcing the compliance model (legal and ethical) for adherence to professional and organizational standards, and was available to 10.4% of study participants. A clinical ethics office was established and ethical training was offered to better equip staff to deal with ethical dilemmas. This organizational solution focusing on reinforcement of the compliance model was unsatisfactory to 25.6% of the managers interviewed, who expressed a need for other forms of support closer to the clinical realities of nurses in specific situations. In fact, very few nurses from the hospitals concerned mentioned using these resources. In addition, traditional organizational conditions tend to accentuate stress.[113] The suffering stems not so much from the growing number of conflictual situations and dissatisfactions on the job but from the fact that organizations no longer have the means or mechanisms to address employee dissatisfaction, expectations and demands—in other words, to directly target the source of the dilemmas and suffering.

Possible solutions suggested by this analysis

The conscience of an organization committed to ethical conduct shows in its decision-making processes and its respect for these procedures.[114] The managers we interviewed are definitely aware

of and concerned about ethical issues in the workplace, and they recognize the link between certain clinical situations and ethical distress. However, their powerlessness to create conditions that provide greater support and to introduce necessary management methods was palpable. Management leadership alone cannot lead to an organizational ethic. An enabling environment that allows the development of an organizational ethic, that is, a learning organization, is required.[115] Learning organizations focus on the quality of people's reasoning, their shared visions, their thinking ability, team learning and the understanding of complex problems.[116] Five disciplines are essential to a learning organization: systems thinking, personal mastery, mental models, shared vision and team learning.[120] Developing a learning organization involves individual, team and organizational learning. Such learning is a form of professionalization rooted in collaboration and thinking things through together for continuous improvement of the organization.

These then are the players implicated in complex care who can generate ways of countering stressors at the source. A work environment that fosters a capabilities model is better suited to transforming work based on knowledge.[117,118] This study thus suggests, as the principal approach to a solution, looking to capabilities models in order to create an enabling environment that allows nurses to develop new skills and knowledge and to expand their action options as well as their control over their duties and how they perform them—that is, an environment that gives them greater autonomy.[117] Integration of a palliative approach could provide an excellent opportunity to work with these learning organization models.

DISCUSSION OF RESULTS OF STUDY 5

A capabilities model recognizes autonomy and engagement of human resources and would be likely to reduce sources of suffering and foster meaningfulness. These concepts are central to the final model validated by Study 5, which was used to verify our two initial hypotheses. First, the model we developed addresses three major factors: lack of autonomy, staffing shortages and difficulty dealing with the distress of patients and families. By also taking into account work intensity and quality of social relations, including how the team functions and quality of interpersonal relations, the new model explains more than the initial model. The model developed through this project focuses on five of the six categories recently suggested by the ministry of labour in France for classifying the main psychosocial occupational risk factors. The model can explain more than 80% of the variance in nurses' job satisfaction and 40% of the variance in emotional distress. Staff shortages are the main predictive factor for both. Applied to EoLPC, the model reinforces the importance of interprofessional collaboration and access to an interdisciplinary team specializing in PC, as described in the qualitative studies, Study 1 and Study 2. This finding suggests that the priorities should be access to human resources and bolstering of teamwork.

Second, meaning at work mediates between autonomy and job satisfaction. The relation between autonomy and job satisfaction changes depending on the nurse's perception of the meaningfulness of her work. For the job to be satisfying, not only must the organization allow the nurse autonomy, that is, allow the nurse to participate actively in the decision-making process, but the nurse must also feel the work is important and consistent with her personal values (coherence). Both the organization and the nurse play an active role in achieving coherence of personal values with those of the organization.

Limitations and strengths of this study. We took an innovative approach and the results are very much in keeping with those of two major European studies that also demonstrated the

importance of the quality of teamwork and interpersonal relations. By incorporating these aspects of the work environment while considering values and emotional issues related to suffering, we were able, for the first time, to develop and empirically test a structural equation model based on these studies. The small size of our study population limits its external validity. Replication with other samples of healthcare workers is required. The final hybrid model was, however, tested with success on the other half of our sample. Not only did the fit indices remain satisfactory, but the second validation once again explained more than 80% of the variance in the nurses' job satisfaction and 40% of their distress, corroborating the initial results and providing preliminary significant support for the model.

INTEGRATION

The results of Study 1 clearly demonstrate the presence of stressors experienced by nurses who work in ICUs, where a significant proportion of patients in critical condition die. Providing access to team support for development of competence in PC and thus recognizing EoLPC in the ICU is a strategic priority. In fact, Study 2 demonstrated that the team is an indispensable resource for the nurse, and measures must be taken to clarify roles and ensure the nurse a place in decisions about level of care, treatment withdrawal and medication. Both studies indicated a need to develop individual and team skills in the following: identifying discomfort and providing relief; dealing with or preventing ambiguity (e.g., treating the patient when treatment withdrawal is imminent); handling the sometimes conflicting requests of families; providing support while ensuring one's own emotional health; handling judgments of colleagues; and providing end of life support when necessary. One way to improve skills in EoL care is to examine and discuss clinical cases using capabilities models, as the conclusions of Study 4 suggest. All the studies conducted for this project demonstrated the emotional demands on the nurses, especially the difficulty of managing the distress of the patient and the family. Emotional support programs together with implementation of palliative care models are other promising avenues.

The four qualitative studies demonstrated the difficulties inherent in providing EoLPC when a mixed approach is taken, especially in a specialized setting such as an ICU. The moral conflicts, ethical dilemmas and ethical suffering were made clear. Even Study 5, in recognizing that *Meaning at work* mediates between *Autonomy* and *Job satisfaction*, looks at values (coherence) and the importance of recognizing possible conflicts. The study of managers (Study 4) showed the scope of the challenge and how powerless the managers felt to solve the problems of ethical suffering, which demand more than setting up committees or structures. Clearly, there is no simple solution.

Together the results of the five studies suggest the following conclusion: the stress model offers guidelines for organization of EoLPC. It suggests giving priority to human resources and taking meaningfulness into account. Working with values and what is meaningful to develop individual and team skills using a capabilities model and the principles of the learning organization seems the most promising approach.

5. AVENUES FOR ACTION

From the start of the project, a follow-up committee was formed and its members participated in workshops held at different key moments in the project. One of the topics discussed was the strategy for disseminating results. Thus the dissemination plan is the product of exchanges between the project researchers, the committee members and other workshop participants (clinicians and researchers). It follows the guide by Reardon et al.[119] on knowledge transfer, which contains the following five principles: What is the message? Who is the audience? Who should be the messenger? What is the transfer method? What is the expected outcome? The key messages gleaned from the project were formulated as the following recommendations:

On an organizational level:

- Recognize EoLPC as a specialty;
- Develop mechanisms for collective decision-making (intra and interprofessional) on the level of care;
- Improve access to qualified human resources and recognize EoLPC when assigning patients and functions;
- Set up an area for families;
- Develop a culture of ethics;
- Support and preserve the collective as support for nurses;
- Clarify EoL protocols and emphasize the values to be upheld within the organization;
- Develop quality indicators and reinforce the quality of care, since it imparts meaning to the job.

On a professional level:

- Support personal and collective skills in palliative care;
- Set up complementary programs that emphasize the development of personal and collective ethical competence;
- Use learning models based on clinical cases and involve the actors; promote collaboration with specialized PC teams;
- Improve mechanisms for communication and information flow between the team and the family;
- Develop protocols and benchmark practices (practice guidelines);
- Set up a model or process for ethical decisions within teams.

On an emotional level:

- Recognize the emotional demands inherent in EoL care;
- Support caregivers in the integration of their experience of ethical and emotional suffering;
- Accompany professionals in their search for ways to deal with their emotions;
- Create safe spaces for talking about emotions;
- Explore and mobilize values and meaning.

The dissemination plan consists of four levels: local/regional, provincial, national and international. At the local/regional level, exchanges and knowledge transfer took place throughout the project through feedback meetings. At the end of the project, two full days were devoted to applying the knowledge at a workshop subsidized by the Canadian Institutes of Health Research. A science café sponsored by the IRSST was added to the workshop. As for provincial dissemination,

copies of the final report will be sent to the DQC, INESSS, MSSS, OIIQ and RQSP. At the national level, copies will be sent to the Canadian Hospice Palliative Care Association and to all the project partners, many of whom have their own distribution channels. To reach clinicians, we are planning to give talks at the RQSP and CHPCA annual conventions. At the international level, efforts to disseminate to the scientific community are under way. Finally, the application of several of our recommendations will commence with the startup of SATIN II.

CONCLUSION

In a context of increasing demand for palliative care and a shortage of human resources, development of a theoretical model—as we have done in SATIN I—will guide the development of future evaluative studies. Implementation of the Quebec policy on EoLPC presents enormous challenges but also unique opportunities for the development of theories, methodologies and interventions. The integration of palliative approaches in a context of participatory and evaluative research constitutes a logical follow-up to SATIN I, and this is precisely the spirit in which SATIN II was developed as the next step. SATIN II proposes the development and concomitant implementation, in four different institutions, of support programs for EoLPC based on a participatory approach integrating various actors according to the principles of the learning institution.

APPENDICES

APPENDIX A

List of Tables

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Table 1. *Variables in initial model and justification of variables added for development of enriched model*[1]

Category	Concept	Initial variables, source questionnaire + Additions for model enrichment (indicated by *)	Justification
DEMANDS			
Organizational	Organizational demands	Demands – JCQ[120] Effort – ERI[121] Other organizational factors – ORFQ:[122] - Staffing and material resources* - Communication and social hindrance*	Studies: Stressor (I) Ergonomic (II) Dilemmas (III)
Professional	Demands linked to professional expertise	NSS: [123] - Uncertainty concerning treatment - Conflict with physicians ORFQ: - Training and skills*	Studies: Stressor (I)
Emotional	Demands linked to emotional and existential context of PC	NSS: - Distress of family and patient - Death and dying - Venting of emotion Moral issues – SCQ*[124]	Dilemma Study (III)
RESOURCES			
Organizational	Autonomy	People-oriented culture – OPP[125,126] Reward – ERI Decision latitude (Control) – JCQ Recognition – PSYCLI*[127] Support from administration* and No changes to planned time off – NWI*[128]	Literature + Stressor Study (I) Ergonomic Study (II) Dilemma Study (III)
Professional	Collective competence (social relations)	Support from manager; from team – NWI* Team functioning:[129] - Interpersonal support – FI-SI* - Team management – FI-GE*	Literature + Stressor Study (I) Ergonomic Study (II) Dilemma Study (III)
Emotional	Self-perceived competencies	Self-perceived competencies – PCISP*[130]	Stressor Study (I)
MEANINGFULNESS			
Importance	Importance of work	Meaningfulness – EW, MPW*[131][132]	Previous studies
Coherence	Personal vs. organizational values	Work role fit – EW*	Idem + Dilemma Study
Orientation	Guidance	Orientation – MPW*	Idem
DEPENDENT VARIABLES			
Job satisfaction		Job satisfaction: Overall – JDS[133] For nurses: enjoyment of work and quality of care – NJSS*[134]	Ergonomic Study (II)
Well-being	Distress	Psychological Distress Index – PDI[135]	

[1] For descriptions of the questionnaires, see Appendix B: Details on Questionnaires Used.

Table 2. *Description of sites and participants – Study 1 (Stressors in ICUs)*

Site	Urban/ Rural	University affiliated	Open/ closed	Palliative care resources	Sex		Average age	Age (SD)	Education			Years of experience	
					Men	Women			College diploma	B.Sc.	M.Sc.	ICU	Total
A	Urban	Yes	Semi-closed	Yes	1	6	37.4	12.1	4	3	0	10.7	14.9
B	Urban	Yes	Closed	No	0	6	43	12.3	5	0	1	14.1	21.0
C	Rural	No	Open	No	0	9	36.2	5.9	4	5	0	10.6	13.0
D	Urban	Yes	Closed	Yes	0	12	44.9	8.5	4	8	0	14.0	20.0
E	Urban	Yes	Closed	Yes	1	7	35	6.5	5	2	1	6.6	8.1

Table 3. *Three categories of stressors in ICUs, illustrated by quotations (Study 1)*

Category	Definition	Stressors	Illustration
Organizational	Demands related to work organization and to the particular context of nurses	**Lack of structured programs in EoLPC**: Little or no PC culture in ICUs Material resources: Shortage of beds, lack of space, no family rooms, no privacy Human resources: No specialized PC team; certain professionals (social workers, chaplains) not available evenings, nights and weekends **Conflicting demands (mixed model)**: Having to provide both curative and palliative care to different patients at the same time **Lack of continuity in treatment plan:** Changes in level of care from one doctor to the next; medical team failing to reach a consensus on a treatment plan **Lack of professional skills in EoLPC:** Lack of training in managing EoL symptoms, administrative procedures following death, etc.	"In intensive care, we save lives. People are not at the end of their lives, so that's not the mentality. It's not in the population, no… In intensive care, there's a chance of survival." "I had a family waiting for the brother to arrive from out of town so that the patient could be unplugged. We were waiting. But I had the operating room going hurry up, hurry up… And the patient's daughter happened to overhear this. And she said to herself, if we have to unplug him, we won't wait (…) I still shudder when I think about it (…) But I said wait, we're talking about your father, you're the priority (…) but I found it… there are no words for it… well, inhuman."
Professional	Demands related to the nurse's professional role	**Difficulty communicating with family**: Limitations on the information the nurse can provide to the family; families having numerous questions or complaints **Difficulty collaborating with medical team regarding EoLPC in an ICU**: Nurses are left out of decision-making; doctors' unwillingness to make decisions about treatment withdrawal and level of care **Absence of protocols or guidelines** on EoLPC	"Protocols. (...) Directions, you know, it's not left to the individual nurse or even resident or, staff person to have to anguish over decisions that have been made because it is about the things that you should be doing for a patient who is dying. (...) They don't have to make the call, they don't have to feel guilty that "oh, you know, I should have done

			this, or I should've done that", no, this is what we'll be doing."
Emotional	Emotional demands and anxiety associated with EoLPC	**Moral stressors**: Discomfort with acting according to one's own values when extraordinary treatments or measures are provided **Lack of emotional support**: Absence of a safe space for expressing and sharing one's distress; having to dispense treatments that accelerate death **Managing distress of patient and family**: Difficulty meeting the patient's and family's need for comfort and support; the latter are not taken into consideration when patients are assigned	"You have the family standing around watching you, and then the patient is unplugged and you come along with a syringe to relieve the pain. If the patient dies 10 minutes later, what do people think? That you provided comfort, or that you killed her? Unfortunately, what they will remember is that you killed her…"

Table 4. *Data gathered in intensive-care units A and B (Study 2)*

Description	Site A	Site B	Total
Interviews with nurses and nurse managers, practising or trained in PC	2	6	8
Number of nurses observed	5	9	14
Number of nurses met with individually after observation	2	5	7
Number of shifts observed (day, evening, night)	7	23	30
Number of hours of observation	42	137	179
EoL episodes observed	3	5	8

Table 5. *Aspects considered difficult or satisfying by nurses during EoL episodes observed (n=8) (Study 2)*

	Difficult	Satisfying
Relations with patient	*Feeling that the patient suffered or was uncomfortable*	*Knowing that the patient was at peace with the decision to stop treatment* *Feeling that the patient did not suffer*
Relations with family	*Dealing with demanding family members who want a lot of explanations and who keep changing their minds*	*When family members express gratitude*
Relations with doctors	*When a doctor questions another doctor's decision to administer comfort care, even though the nurse has already begun to administer it* *Giving the prescribed treatment but knowing that the family is prepared to stop treatment* *Giving medication to stabilize blood pressure but knowing that the decision to stop treatment is imminent*	*Having the doctor's cooperation in rapidly prescribing comfort care* *Feeling in agreement with the intensivist about the timeliness of comfort care*
Relations with other nurses	*Feeling judged by a co-worker for one's evaluation of the pain experienced by the patient*	
Organization of care and work	*Showing unfamiliarity with the organ donations procedure in front of the family*	*Having time to explain carefully to the family what is happening* *Being involved in the decision making process and in meetings between the doctor and the family*

Table 6. *Description of sample (N = 751) (Study 5)*

Continuous variables	Ave.	S.D.	Min.	Max.
Age (years)	41.35	(11.37)	21	76
Nursing experience (years)	17.48	(11.30)	1	42
Years of service in the establishment (years)	11.67	(9.88)	0	40
Number of hours worked/week	33.70	(8.10)	0	88

Categorical variables		Number	Percentage
Sex	Female	694	92.5
	Male	56	7.5
Level of training	College	214	28.8
	University	530	71.2
Employment status	Permanent full-time	482	66.9
	Permanent part-time	181	25.1
	Temporary full-time	31	4.3
	Temporary part-time	26	3.6
Workplace	Establishment (HC)	383	52.0
	People's homes (CSSS)	326	44.2
	Hospice	28	3.8
Fields of practice	Home care	318	42.3
	Critical care	249	33.2
	Oncological care	115	15.3
	Palliative care	69	9.2

Table 7. *Variables selected for enriched model (N = 751)*[2]

Indicator	Ave.	S.D.	Theoretical scope	Real scope	Cronbach's alpha
Organizational demands					
Demands (JCQ)					
Effort (ERI)					
Staffing resources (ORFQ)					
Communication (ORFQ)					
Social hindrance (ORFQ)					
Material resources (ORFQ)					
Professional demands					
Uncertainty concerning treatment (NSS)					
Conflict with physicians (NSS)					
Training opportunities (ORFQ)					
Job skills (ORFQ)					
Emotional demands					
Death and dying (NSS)					
Patient distress (NSS)					
Venting of emotion (NSS)					
Moral issues (SCQ)					
Organizational resources					
People-oriented culture (OPP)					
Reward (ERI)					
Decision latitude (JCQ)					
Recognition (PSYCLI)					
Changes in planned time off (NWI)					
Support from administration (NWI)					

[2] To calculate the descriptive statistics, missing data were estimated using an expectation-maximization algorithm, by block of variables.

Professional resources
Support from nurse manager (NWI)
Team relations (NWI)
Team support (FI-SI)
Management of teamwork (FI-GE)
Emotional resources
Self-perceived competencies (PCISP)
Meaningfulness
Importance (EW)
Work role fit (EW)
Meaning at work (MPW)
Work unit and meaningful work (MPW)
Dependent variables
General job satisfaction (JDS)
Enjoyment (NJSS)
Quality of care (NJSS)
Psychological distress (PDI)

Table 8. *Confirmatory factor analysis with pattern coefficients and fit indices (n = 376) (Study 5)*

	Model A		Model B		Model C	
	Coef.[a]	r^2	Coef.[a]	r^2	Coef.[a]	r^2
Variable						
Demands (JCQ)						
Effort (ERI)						
Staffing resources (ORFQ)						
Communication (ORFQ)						
Social hindrance (ORFQ)						
Material resources (ORFQ)						
Uncertainty concerning treatment (NSS)						
Conflict with physicians (NSS)						
Training opportunities (ORFQ)						
Job skills (ORFQ)						
Death and dying (NSS)						
Patient distress (NSS)						
Venting of emotion (NSS)						
Moral issues (SCQ)						
People-oriented culture (OPP)						
Reward (ERI)						
Decision latitude/Control (JCQ)						
Recognition (PSYCLI)						
Changes in time off (NWI)						
Support from administration (NWI)						
Support from nurse manager (NWI)						
Team relations (NWI)						
Support within team (FI-SI)						
Management of teamwork (FI-GE)						
Self-perceived competencies (PCISP)						
General job satisfaction (JDS)						
Enjoyment (NJSS)						
Quality of care (NJSS)						
Psychological distress (PDI)						
Fit index	Model A		Model B		Model C	
χ^2 (df)						
P						
χ^2/df						
RMSEA						
CFI						
SRMR						

Table 9. *Confirmatory Factor Analysis, Model D (n = 376)*

Model D	F1	F2	F3	F4	F5	F6	F7	F8
Pattern coefficient								
Demands (JCQ)								
Effort (ERI)								
Staffing resources (ORFQ)								
People-oriented culture (OPP)								
Reward (ERI)								
Recognition (PSYCLI)								
Management of teamwork (FI)								
Support from team (FI)								
Patient distress (NSS)								
Importance (EW)								
Work role fit (EW)								
General job satisfaction (JDS)								
Nurse job satisfaction (NJSS)								
Psychological distress (PDI)								
Inter-factor correlation								
Work intensity (F1)								
Staffing shortages (F2)								
Autonomy (F3)								
Social relations (F4)								
Emotional demands (F5)								
Meaning at work (F6)								
Job satisfaction (F7)								
Emotional distress (F8)								
Fit index								
χ^2 (df)								
P								
χ^2/df								
RMSEA								
CFI								
SRMR								

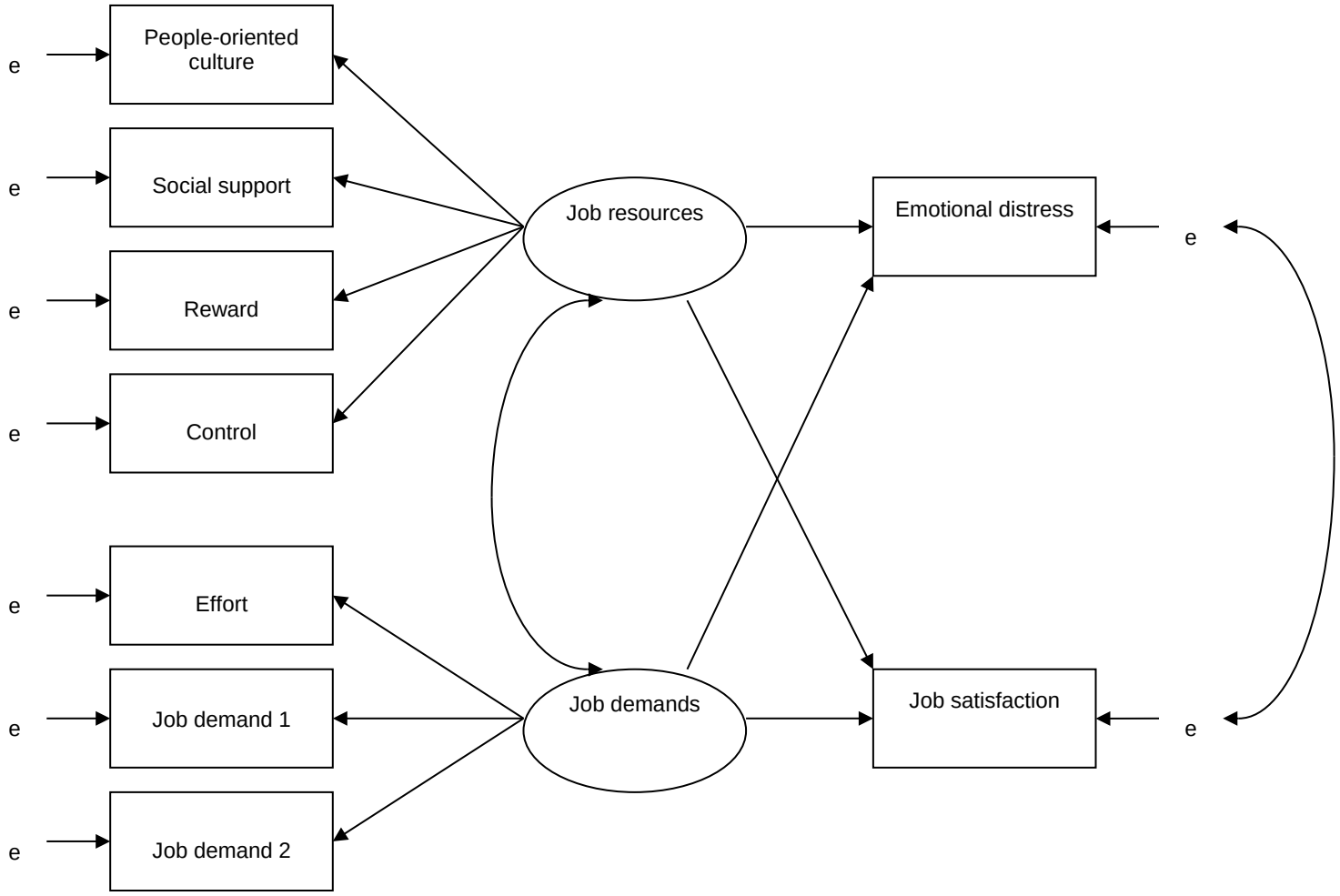

Figure 1

Integrative occupational stress model as tested by Fillion et al. (2007). Indicators (variables measured) are represented by rectangles while factors (latent variables) are represented by ellipses. Straight one-way arrows indicate a causal relationship, and curved two-way arrows indicate a non-causal correlation. Measurement error is represented by the letter "e."

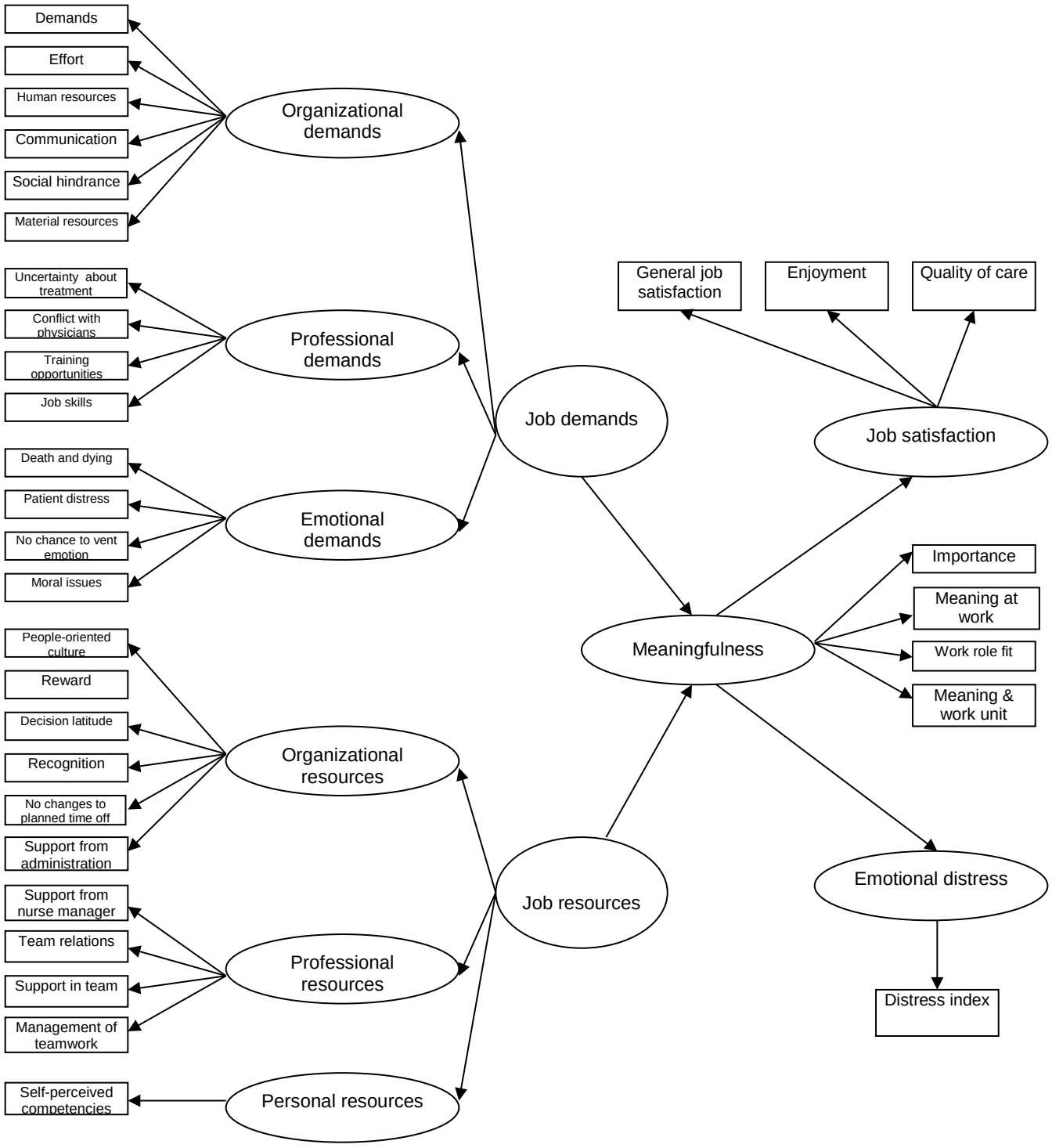

Figure 2 Enriched occupational stress model. Variables are shown in rectangles, first-order factors (directly measured by variables) in ellipses and second-order factors (not measured by variables) in circles. Straight one-way arrows indicate a causal relationship. To make the figure easier to read, measurement error is not shown.

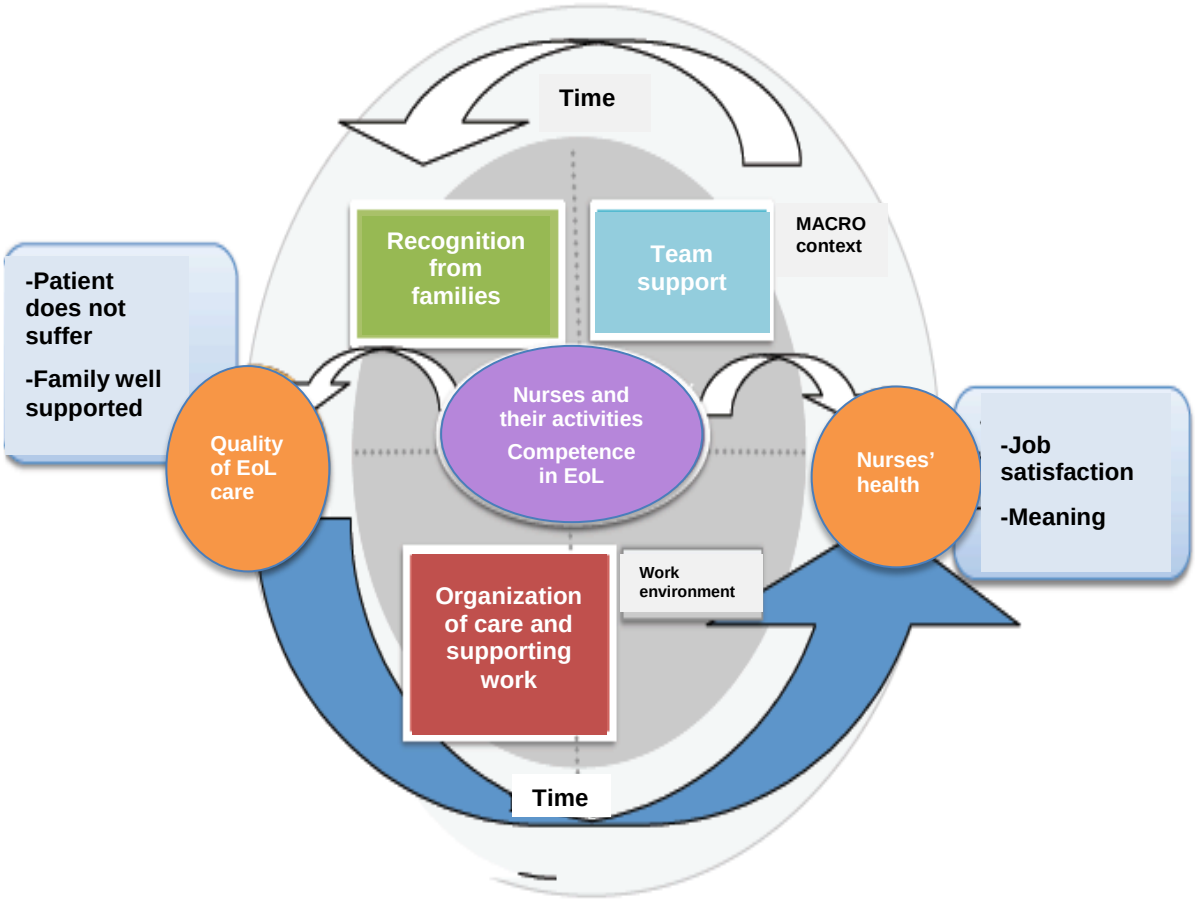

Figure 3 Modeling of work situation of nurses providing EoL care in an ICU (Study 2)

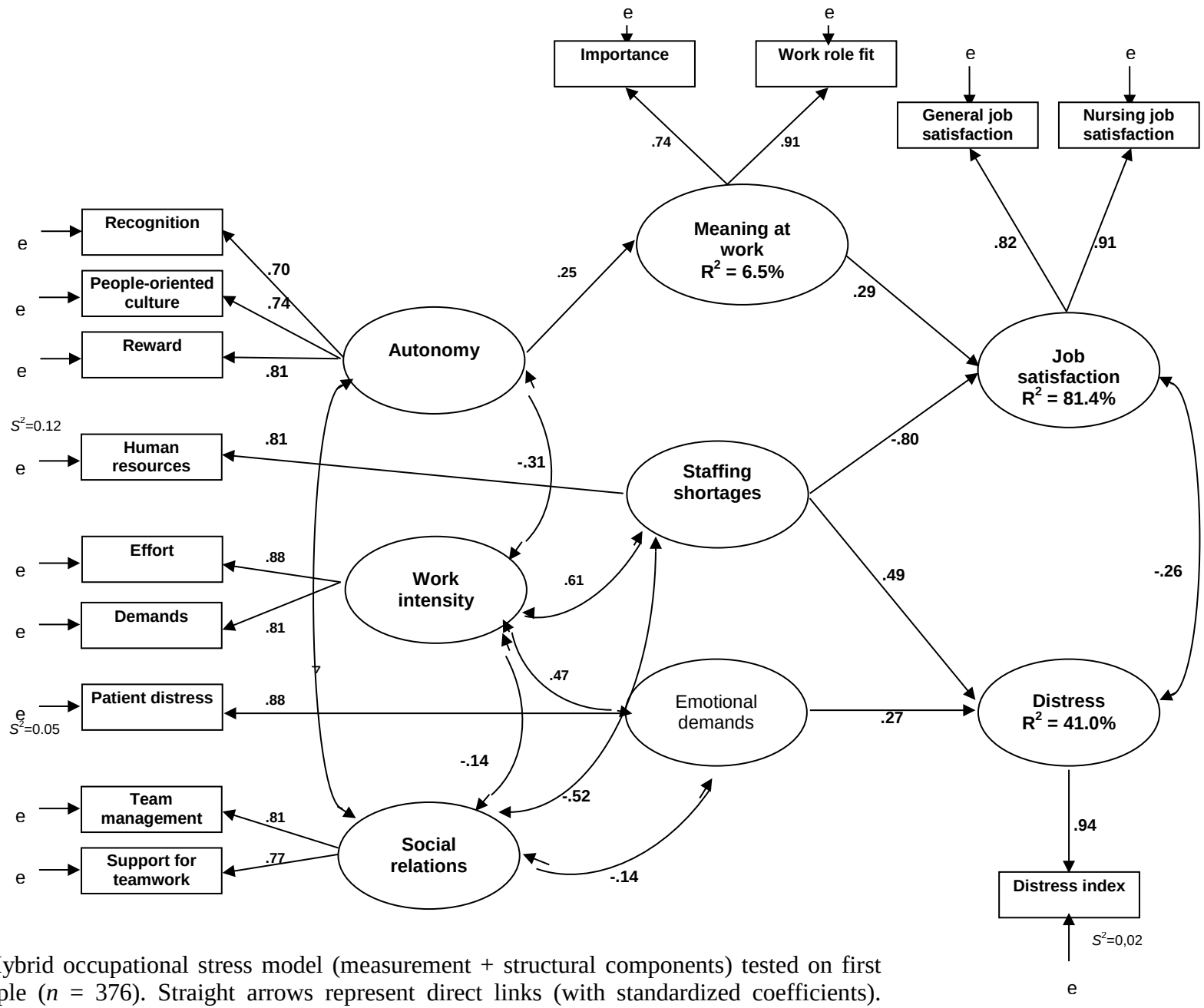

Figure 4 Hybrid occupational stress model (measurement + structural components) tested on first half of sample (n = 376). Straight arrows represent direct links (with standardized coefficients). Curved arrows represent correlations between factors.

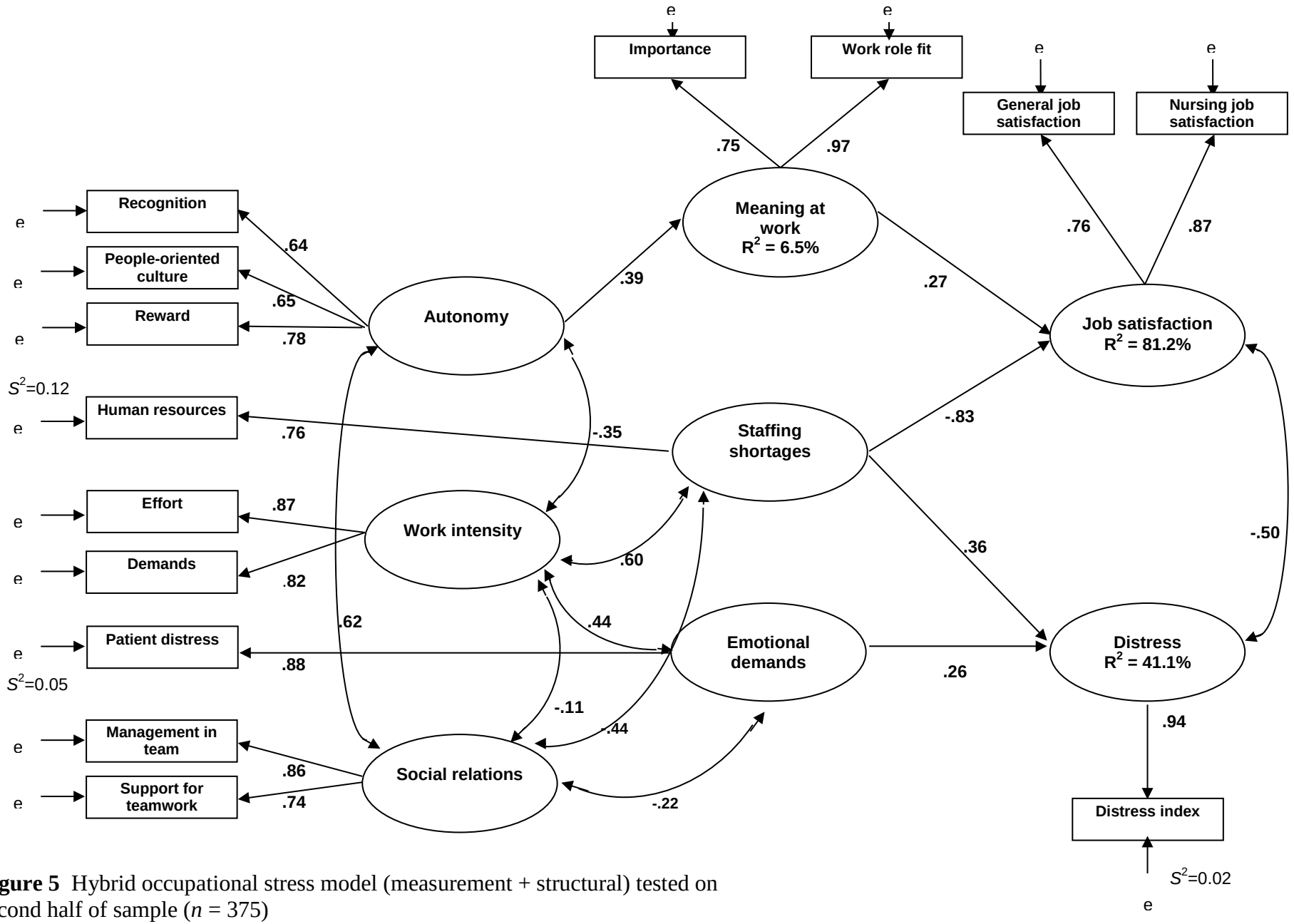

Figure 5 Hybrid occupational stress model (measurement + structural) tested on second half of sample (n = 375)

APPENDICES B

B1- Summary of Workshops for Knowledge Exchange and Transfer During Project

B2- Details on Questionnaires Used

B1- Summary of workshops for knowledge exchange and transfer during project

SATIN I Workshops

Impact of the Work Environment on Nurses' Job Satisfaction and Well-Being: Improving EoL Care and Services (SATIN I)

Name: Workshop I
Date: May 28, 2008
Number of participants: 27
Objectives: To present the approach, explain the roles of the participants (decision makers, clinicians, and the PC and industrial relations research team) and initiate a discussion on how to improve EoLPC
Topics: (1) Presentation of research program and preliminary studies; (2) Mission of follow-up committee; (3) Discussion of research activities planned for Phase I; (4) Discussion on meaning at work and the importance of including it in the organization of EoL care and services.
Structure: Presentations followed by discussion in small groups and then a plenary.

Summary: All the participants agreed that if the quality of care is to be maintained, ensuring the well-being of nurses providing EoL care is imperative: "Taking care of patients means taking care of nurses" Workshop I. The nurse's role is crucial to the patient and the patient's family. Palliative care should be better integrated into ICUs; however, most of the participants noted that a special approach to palliative care is needed in an ICU. Nurses providing EoL care in ICUs frequently experience ethical dilemmas, since death is not an acceptable outcome there; all of the technical resources are focused on sustaining life. The participants spoke about the difficulty of knowing where to draw the line—when to continue treatment, and when it becomes therapeutic obstinacy. Some pointed out that the same dilemma exists in other units: oncology, cardiology, nephrology, surgery, emergency and pediatrics. Several doctors suggested adding English-language hospitals, open-type ICUs and facilities outside the urban centres.

Name: Workshop II
Date: October 28, 2008
Number of participants: 30
Objectives: To report on Phase I and to have further discussions on meaning at work with the aim of establishing a more precise orientation for Phase II.
Topics: (1) Report on Phase I; (2) Presentation by guest speaker Marie Alderson (Université de Montréal): results from a study on meaningfulness of work, conducted on nurses in long-term care facilities; (3) Discussion on meaning at work and the importance of including it in the organization of EoL care and services; (4) Discussion of research activities planned for Phase II.
Structure: Presentations followed by discussion in small groups and then a plenary.

Summary: A report on Phase I was presented. The objectives of Phase I were (1) to describe the stressors linked to providing EoL care in an ICU, and (2) to identify the moral dilemmas. For Objective 1, data were gathered through focus groups on the nature of stressors; for Objective 2, through individual interviews in which nurses described the stressors linked to moral dilemmas. Awaiting ethical approval for hospitals in Montréal and in the regions. After Ms. Alderson's presentation, the participants pointed out similarities between the sources of suffering or meaninglessness seen in long-term care facilities and those found in other facilities or contexts

where EoL care is dispensed: for example, ethical conflicts, emphasis on performance, doctors' personal values interfering with their work and causing tension for family members, nurses and other staff. During the small-group discussion, participants came up with several definitions of meaning at work: consistency between one's personal values and those of the organization, or harmony between one's identity (based on personal values) and one's job. Participants questioned Estelle Morin's conceptual definition, failing to see clear distinctions between the three aspects she proposes. Moreover, the participants agreed, there is no easy way of measuring these three aspects. Some pointed out that certain aspects such as enjoyment were missing from the construct. According to the researchers, a systematic thematic analysis is needed. It was announced that Phase II would be delayed and the next workshop would be held in the fall of 2009.

Name: Workshop III
Date: September 29, 2009
Number of participants: 30
Objectives: To summarize progress made in the research program (presentation of Phase I preliminary results) and to discuss the research activities planned for Phase II (study on meaning at work, well-being and job satisfaction) and Phase III (ergonomic and organizational study).
Topics: (1) Presentation of Phase I preliminary results – Study on stressors; (2) Presentation of Phase I preliminary results – Study on ethical dilemmas; (3) Workshop on establishing benchmarks for the organization of palliative care; (4) Workshop on measuring moral stressors; (5) Presentation of Phase II; (6) Presentation and discussion of plan for disseminating Phase I results; (7) Presentation of Phase III – Ergonomic study; (8) Presentation of Phase III – Study on managers.
Structure: Presentations followed by discussion in small groups and then a plenary.

Summary: The preliminary results from Phase I (studies on stressors and ethical dilemmas) were presented. All the participants agreed with the results. After the presentation on Phase III (ergonomic study), several participants said it would be interesting to compare facilities of different types or having different vocations: university vs. non-university, urban vs. outlying region, or having different systems of work organization, for example. After a presentation by Lyse Langlois on the Phase III study of managers, participants were asked who should be interviewed for this study. They made numerous suggestions including unit heads, director of nursing, director of professional services, etc. as well as consulting the organization charts of the establishments concerned. A question came up about how many facilities should be included in the study. The initial number planned was two, but the participants suggested including the five hospitals from Phase I. Dissemination of the results was then discussed and the following strategies were proposed: presentations in hospitals where nurses participated in the research; dissemination to the general public; presentations to interdisciplinary committees, the College of Physicians, and the boards of healthcare establishments and provincial associations (the ones that have boards); and publication in scientific and trade journals. A dissemination plan was started. The results from all the studies will be developed into observations and presented at the last workshop in fall 2011, just before the end of the project.

Name: Workshop IV
Date : November 25, 2011
Number of participants: 31
Topics: (1) Presentation of results and observations from all three phases: Phase I – Study on

stressors and ethical dilemmas experienced by nurses dispensing EoL care in ICUs; Phase II – Study on job satisfaction and well-being of 751 nurses practising in Quebec in four areas of healthcare; Phase III – Direct observation in different types of EolPC-providing facilities and consultation of managers to determine their views on favourable conditions for management practices; (2) Summary of messages from the five studies; (3) Discussion of a plan for disseminating the main messages and which messages to prioritize.
Structure: Presentations followed by discussion in small groups and then a plenary.

Summary: The results from all three phases of the SATIN I research project were presented. The dissemination plan was presented. There was a general consensus on the following target publics: managers/decision-makers/human resources, nurses. Several participants added intensivists, physicians, the medical profession and the public at large. As for the messages to be given priority when disseminating the results from the study on stressors (Phase I), most of the participants agreed on the following *organizational stressors*: lack of space for families, lack of places for discussion, and lack of human resources (social workers, family support, psychosocial support, etc.) during EoL situations in ICUs. All the participants agreed on the following *professional stressors:* lack of knowledge about how to relieve pain or provide palliative care; and lack of interprofessional collaboration and communication. Most of the participants also mentioned disagreement among physicians about the treatment plan. As for *emotional stressors*, most of the participants cited conflicts of values brought about by denial of death and the curative (versus palliative) mission of medical teams. After presentation of the results from the study on managers (Phase I), most of the participants commented that nurses experience conflicts of values but do not mention them to their supervisors. It was also noted by most of the participants that the presence of an ethicist in the wards, as is the case in certain hospitals, does not solve the problem.

B2 – Details on Questionnaires Used

Job Content Questionnaire (JCQ)
The JCQ (Karasek, 1985) is an instrument for assessment of psychosocial job characteristics. The two variables used in the SATIN I project are *decision latitude* (9 items) and *psychological demands* (8 items). A scale of 1 (Strongly disagree) to 4 (Strongly agree) is used. A high score indicates a high level of decision latitude or psychological demands.
Reference: Karasek, R. A. (1985). *Job Content Questionnaire and user's guide.* Lowell: University of Massachusetts, Department of Work Environment.

Effort-Reward Imbalance (ERI)
According to the ERI Model (Siegrist, 1996), occupational stress results from an imbalance between high effort spent and low reward received at work. For this research project, two subscales were used: *Effort* (6 items) and *Reward* (11 items). A scale of 1 (Strongly disagree) to 4 (Strongly agree) is used, and a score is calculated by averaging the responses in each subscale. A high score for the Effort sub-scale indicates high effort, while a high score for the Reward subscale indicates high reward.
Reference: Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology, 1*, 27-41.

Organizational Risk Factors Questionnaire (ORFQ)
The ORFQ (Akerboom & Maes, 2006) is a 52-item scale designed to identify and measure organizational sources of stress. It has six subscales: *Staffing resources* (10 items), *Communication* (9 items), *Training opportunities* (8 items), *Social hindrance* (10 items), *Job skills* (9 items) and *Material resources* (6 items). The items are presented on a scale of 1 (Never) to 4 (Very often). The responses in each subscale are averaged to obtain the score for that subscale, and the responses to all 52 items are averaged to obtain an overall score. The higher the score, the greater the risk factor.
Reference: Akerboom, S., & Maes, S. (2006) Beyond demand and control: The contribution of organizational risk factors in assessing the psychological well-being of healthcare employees. *Work & Stress, 20*(1), 21-36.

Nursing Stress Scale (NSS)
The NSS (Gray-Toft & Anderson, 1981) is an instrument for assessing the level of stress felt by nurses in reaction to situations at work. The version used in this research is the adaptation by Fillion et al., 2007, consisting of 26 items grouped into five subscales: (1) *Exposure to death*, (2) *Uncertainty about treatments*, (3) *Conflict with physicians*, (4) *Patients' and families' emotional distress* and (5) *Lack of opportunity to vent emotion*. Respondents indicate how frequently they encounter the described situations on a scale from 1 (Never) to 4 (Very often). The responses are averaged to obtain the score for each subscale.
Reference: Gray-Toft, P. & Anderson, J. G. (1981). Stress among hospital nursing staff: Its causes and effects. *Journal of Social Science Medicine, 15A*, 639-647.

Stress of Conscience Questionnaire (SCQ)
The SCQ (Glasberg et al., 2006) is a nine-item instrument for assessing the frequency of situations that trouble the conscience for healthcare workers. Responses are on a scale from 0 (Never) to 5 (Every day); a high score indicates severe moral distress.

Reference: Glasberg, A.L., Eriksson, S., Dahlqvist, V., Lindahl, E., Strandberg, G., Söderberg, A., Sorlie, V. & Norberg, A. (2006). Development and initial validation of the Stress of Conscience Questionnaire. *Nursing Ethics, 13*(6), 633-648.

Organizational Policies and Practices (OPP)

The OPP questionnaire (Amick et al., 2000) is an instrument that assesses a company's policies and practices on the basis of employee opinions. For SATIN I, only the *People-oriented culture* subscale was used. This aspect, which consists of four items, refers to organizational culture, i.e., whether employees are involved in meaningful decision making, whether there is trust between management and employees, and openness to sharing of information. Responses are on a scale from 1 (Strongly disagree) to 5 (Strongly agree), and the score is obtained by averaging the responses. A high score indicates that the organization is very people-oriented.

Reference: Amick, B. C., Habeck, R. V., Hunt, A., Fossel, A. H., Chapin, A., Keller, R. B. & Katz, J. N. (2000). Measuring the impact of organizational behaviors on work disability prevention and management. *Journal of Occupational Rehabilitation, 10*(1), 21-38.

Psychological Climate (PsyCli)

The PsyCli questionnaire (Koys & DeCotiis, 1991) measures certain dimensions of psychological climate—a construct descriptive of the nature of employees' perceptions of experiences within an organization. For SATIN I, only the five-item *Recognition* dimension was used. Responses are on a scale from 1 (Strongly disagree) to 7 (Strongly agree), and the score is obtained by averaging the responses. A high score indicates a high level of recognition, i.e., the employee's perception that his or her contribution to the organization is recognized.

Reference: Koys, D. J., & DeCotiis, T. A. (1991). Inductive measures of psychological climate. *Journal of Human Relations, 44*(3), 265-285.

Nursing Work Index – Extended Organizations (NWI-EO)

The NWI-EO (Kramer & Hafner, 1989; revised by Aiken & Patrician, 2000; adapted by Bonneterre et al., 2011) measures the characteristics of a professional nursing practice environment. For this research project, five of the NWI-EO's eight factors were used: (1) *Changes to days off* (two items), (2) *Support from administration* (two items), (3) *Support from senior nurse* (i.e., nurse manager) (three items), (4) *Communication* (i.e., relations) *in work unit* (three items) and (5) *Shared values* (two items). To ensure consistency with the rest of the SATIN-I questionnaire, the scale used in the NWI-EO was inverted; thus the responses are on a scale from 1 (Strongly disagree) to 4 (Strongly agree). The score is obtained by adding up the responses in each subscale. A high score indicates a favourable situation.

Reference: Kramer, M., & Hafner, L. P. (1989). Shared values: Impact on staff nurse job satisfaction and perceived productivity. *Nursing Research, 38*, 172-177.

Aiken, Linda H.; Patrician, Patricia A. (2000). Measuring Organizational Traits of Hospitals: The Revised Nursing Work Index. *Nursing Research, 49*(3) 146-153.

Bonneterre, V., Ehlinger, V., Balducci, F., Caroly, S., Jolivet, A., Sobaszek, A.,de Gaudemaris, R., & Lang, T. (2011). Validation of an instrument for measuring psychosocial and organisational work constraints detrimental to health among hospital workers: The NWI-EO questionnaire. *International Journal of Nursing Studies, 48*, 557–567.

Fonctionnement interne (FI-SI and FI-GE)
The FI questionnaire (Rousseau, Aubé & Savoie, 2006) is a 22-item instrument for assessing the internal functioning of teams, i.e., "all behaviours that facilitate the accomplishment of shared tasks within a team" (Rousseau, Aubé & Savoie, 2006, p.121)(Our translation). The items are divided into two dimensions: *Interpersonal support* (FI-SI, 12 items) and *Team management* (FI-GE, 10 items). Responses are on a scale of 1 (Not at all true) to 5 (Very true), and the score is obtained by averaging the responses for each dimension. High scores indicate a high level of interpersonal support and a high level of team management.
Reference: Rousseau, V., Aubé, C., & Savoie, A. (2006). Le fonctionnement interne des équipes de travail : conception et mesure. *Revue canadienne des sciences du comportements, 38,* 120-135.

Perception de compétence infirmière en soins palliatifs (PCISP)
The PCISP questionnaire (Desbiens, 2011) is an instrument designed to measure palliative-care nurses' self-perceived competence; it consists of 34 items grouped into eight factors. For the SATIN I project, we used an initial version consisting of 50 items grouped into 10 domains: (1) *Physical needs – Pain*, (2) *Physical needs – Other symptoms*, (3) *Psychological needs*, (4) *Social needs*, (5) *Spiritual needs*, (6) *Needs linked to functional status*, (7) *Ethical and legal issues*, (8) *Interprofessional collaboration and communication*, (9) *Personal and professional issues linked to care* and (10) *EoL care*. Responses are on a scale of 0 (I don't feel capable) to 10 (I feel very capable) and are averaged to calculate the score. A high score indicates that a high level of competence is perceived.
Reference: Desbiens, J.-F. (2011). *Développement et validation d'une mesure de perception de compétence infirmière en soins palliatifs.* (Doctoral thesis). Université Laval, Québec City.

Engagement at Work (EW)
The EW questionnaire (May, Gilson & Harter, 2004) originally consisted of 81 items grouped into 12 dimensions. For this research project, two scales were used: *Meaningfulness* (six items) and *Work role fit* (i.e., whether the job fits how the employee sees himself or herself)(four items). Responses are on a scale of 1 (Strongly disagree) to 5 (Strongly agree) and are averaged to calculate the score for each subscale. A high score indicates a favourable perception.
Reference: May, D.R., Gilson, R.L., & Harter, L.M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology, 77,* 11-37.

Meaning and Purpose at Work (MPW)
The MPW questionnaire (Duchon & Plowman, 2005) measures the construct of spirituality in the workplace. For SATIN I, two subscales were used: *Meaning at work* (seven items), which measures whether the job is experienced as important, stimulating and enjoyable, and *Work unit and meaningful work* (six items), which measures the extent to which the respondent identifies with the work unit's values, goals and mission. Responses are on a scale of 1 (Strongly disagree) to 7 (Strongly agree) and are averaged to calculate the score for each subscale. A high score indicates a favourable perception.
Reference: Duchon, D., & Plowman, D.A. (2005). Nurturing the spirit at work: Impact on work unit performance. *The Leadership Quarterly, 16,* 807-833.

Job Diagnostic Survey (JDS)

From the JDS (Hackman & Oldham, 1975) we took the five-item Satisfaction scale for assessing job satisfaction. Responses are on a scale of 1 (Strongly disagree) to 7 (Strongly agree) and are averaged to calculate the score for each subscale. A high score indicates a high level of job satisfaction.

Reference: Hackman, R. & Oldham, G.R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, *60*(2), 159-170.

Nurse Job Satisfaction Scale (NJSS)

The NJSS (Hinshaw & Atwood, 1985) consists of 23 items grouped into three subscales: *Quality of care* (three items), *Enjoyment* (eleven items) and *Time to do one's job* (eight items). Responses are on a scale of 1 (Strongly disagree) to 5 (Strongly agree). Responses for a given subscale are averaged to obtain a score for that subscale; an overall score is obtained by averaging all 23 items. A high overall score indicates a high level of job satisfaction.

Reference: Hinshaw, A.S., & Atwood, J.R. (1985). *Anticipated turnover among nursing staff. Final Report.* The University of Arizona, Tucson.

Psychological Distress Index (PDI)

The version of the PDI (Ilfeld, 1976) used is the abridged 14-item version, which measures presence and intensity of symptoms of anxiety, anger, depression and cognitive disorders in the last week. Responses are on a scale of 1 (Never) to 4 (Very often) and are averaged to obtain an overall score. A high score indicates a high level of psychological distress.

Reference: Ilfeld, F.W. (1976). Further validation of a psychiatric symptom index in a normal population. *Psychological Reports, 39*, 1215-1228.

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