

Feasibility, Acceptability, and Preliminary Effects of Educational Intervention to Strengthen Humanistic Practice Among Hemodialysis Nurses in the Canton of Vaud, Switzerland: A Pilot Study

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Abstract

A mixed-design pilot study was undertaken to examine the feasibility, acceptability, and preliminary effects of an educational intervention based on the theory of human caring delivered to hemodialysis (HD) nurses in Switzerland. Participants were 9 nurses and 22 patients undergoing HD. Results showed that the proposed intervention had a high level of feasibility and acceptability. Following the intervention, participating nurses consolidated their caring attitudes/behaviours toward patients undergoing HD. The patients, for their part, perceived significant changes in the nurses' caring attitudes/behaviours following the intervention. Further research is needed to examine its effects on a larger population of nurses and patients.

Keywords: Watson's theory human caring, educational intervention, humanistic practice, hemodialysis nurses, patients

Introduction

Since the start of the 21st century, there has been a shift in the principal causes of mortality and morbidity in industrialised and emerging countries (Atkins, 2005). Indeed, whereas infectious diseases were the major cause of death and disability in the 20th century, noninfectious diseases have become the main cause of mortality and morbidity nowadays (Beaglehole & Yach, 2003; Yach, Hawkes, Gould, & Hofman, 2004). In this context, chronic kidney disease (CKD), which results from kidney damage leading to a significant decrease in glomerular filtration rate (Levey et al., 2003), is presently on an alarming rise in the industrialised world and represents a major public health issue (Bello, Nwankwo, & El Nahas, 2005).

CKD is characterised by an irreversible progression toward end-stage renal failure (ESRF) necessitating replacement treatment by extra-renal blood purification (Lysaght, 2002), the most common form of which is hemodialysis (HD). According to Hamer and El Nahas (2006), the surge in the number of persons with CKD could be explained by the current epidemic of type 2 diabetes, the number of cases of which is likely to double over the next 20 years, and by the aging of the population (Bello et al., 2005). According to Martin and Burnier (2009), about 5% of the population in the industrialised countries is affected by CKD. Switzerland is not immune from this phenomenon as 350,000 of its inhabitants live with the disease, 30,000 with a severe form of it (Golshayan, Paccaud, & Wauters, 2002). Consequently, patients suffering from ESRF and undergoing HD will become a growing population with complex healthcare needs.

For some authors (Chantrel, Lassalle, Couchoud, & Frimat, 2010), the passage to HD

constitutes a radical change in the treatment of persons with CKD. Indeed, prior to extra-renal purification, these persons had to follow strict dietary recommendations, a complex drug regimen, and a frequent biological monitoring. When on HD, patients are managed by a multidisciplinary nephrology team and they normally have three weekly sessions lasting on average 3 to 6 hours, all of which is very exacting on the person cared for. Some authors (Davison & Jhangri, 2005; Weisbord et al., 2005) have pointed out, also, that these persons experience a multitude of physical and psychological symptoms. At the physical level, the literature (Kurella, Suri, & Chertow, 2005; Weisbord et al., 2005) specifies that nearly half of patients undergoing HD suffer from sleep disorders, muscle cramps, sexual dysfunction, pain episodes, and cognitive impairment. Furthermore, these persons continue to follow a strict diet low in salt, phosphorus, potassium, and fluid (Idier, Untas, Koleck, Chauveau, & Rasclé, 2011). Moreover, the pill burden of these patients is usually very high (up to more than 10 pills a day) which implies that they adopt a healthy life style including a high treatment adherence. As far as the psychological aspects are concerned, studies (Drayer et al., 2006; Kimmel, 2000) have shown that at least 25% of patients undergoing HD suffer from depression. In addition to these various symptoms rendering this population vulnerable, Kaba et al. (2007) mentioned that this patient group could also experience social isolation due to the time spent on dialysis or caring for themselves, a factor that interferes with social and family activities. Under these circumstances, it is not surprising that these persons experience a significant decline in quality of life (Boini, Bloch, & Briançon, 2009; Cleary & Drennan, 2005), a factor that can become a predictor of death (Tsai et al., 2010). Consequently, persons with ESRF appear as a frail and vulnerable population that must deal with complex situations.

Regarding the needs of this patient group, Bevan (1998) recognised that nurses remained the pivotal healthcare professionals in their treatment. This point of view was echoed by Sankarasubbaiyan and Holley (2000), who recognised that nurses delivered a significant portion of the interventions during dialysis treatments. Moreover, for Bennett (2011), HD nurses must meet numerous challenges, such as maintaining a high level of competence in the technical and relational aspects of care in order to promote a holistic, person-centered nursing approach. In this regard, nurses' caring practice, which is expressed through the quality of the human relationship established between nurses and cared-for persons, the quality of the nurse's presence, and touch, is an essential ingredient in the development of a person-centered approach to care. In this context, some authors (Brilowski & Wendler, 2005; McCormack & McCance, 2010) have asserted that nurses' caring practice contributed to attenuate the physical and psychological problems experienced by these persons and to enhance their level of well-being.

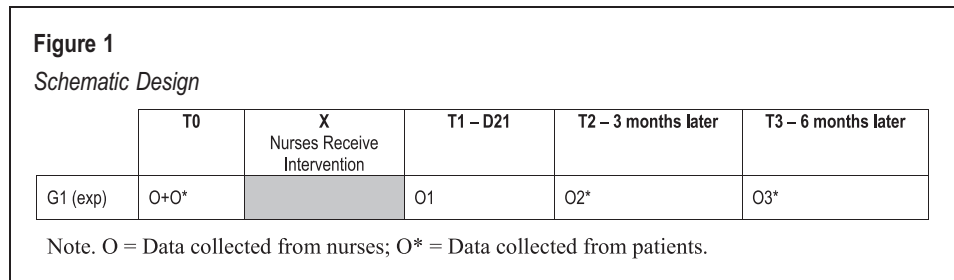
The importance of the relational dimension of nursing care has been well documented in the works of Jean Watson. This internationally renowned theoretician (Watson, 1988, 2001, 2008, 2012) defined nursing care in terms of assistance provided to accompany the cared-for persons to give meaning to their existence, their suffering, and their disharmony through a caring relationship. This relationship corresponds to a human process that Watson (2001) refers to as a "transpersonal caring relationship." It allows nurses to develop a global vision of cared-for persons and to attribute importance to their lived experience. From this perspective, caring rests on humanistic values that influence attitudes and guide behaviours and professional practice, which thus becomes humanising (Cara, 2004). According to this approach, nurses should be able to develop attitudes for compassion, listening, presence for others, understanding, support, reciprocity, and collaboration (Cara, 2004) in order to promote healing and health. Some studies have documented the therapeutic effects of the caring relationship between nurses and cared-for persons, particularly in terms of boosting sense of well-being, autonomy, independence, and hope (Lucke, 1999), improving quality of life (Erci et al., 2003) and patient satisfaction with the nursing care received

(Lee, Tu, Chong, & Alter, 2008) and, reducing the rate of rehospitalisation among patients with heart failure (Duffy & Hoskins, 2003).

Yet, despite the documented benefits of the caring relationship for patient groups living with a chronic condition, some authors (Beagan & Ellis, 2009; Cara, 1997, 1999; MacLeod & McPherson, 2007; O'Reilly, Cara, Avoine, & Brousseau, 2010a, 2010b; St-Germain, 2007) have reported on certain dehumanising nursing practices. On this subject, in her qualitative study examining the meaning of dehumanising practice from the perspective of rehabilitation inpatients, Avoine (2012) reported transcript excerpts of inpatients commenting nurses' lack of listening and understanding as well as complaining about being treated like objects. Similarly, in a study by Moran, Scott, and Darbyshire (2009), patients undergoing HD remarked that their interactions with nurses were very superficial and centered primarily on their physical assessment at the expense of their needs, values, and expectations. According to Bennett (2011), this contributed to dehumanised care. This worrisome situation underscores the urgency for nurses to adhere to humanistic values, particularly those associated with Watson's (2008, 2012) theory of human caring, in order to offer person-centered care, including to patients undergoing HD sensitive to the quality of human relationships. However, though basic training programs do focus on strengthening the caring attitudes and behaviours of nursing students (Sawatzky, Enns, Ashcroft, Davis, & Harder, 2009), there has been little interest in developing interventions to strengthen the caring attitudes/behaviours of registered nurses in particular in hemodialysis. Against this background, we undertook a pilot study to examine the feasibility and acceptability of an educational intervention and to explore its preliminary effects on nurses and patients undergoing HD.

Theoretical Framework

This pilot study was grounded in the Quality-Caring Model© developed by Duffy and Hoskins (2003) as a middle-range theory to help understand the connections between the nurse's relationship, characterised by caring, and the observation of positive outcomes for the patient, the family, the healthcare professionals, and the healthcare system as a whole (Duffy, 2009, 2013). From this theoretical perspective, the caring relationship developed by nurses becomes a therapeutic intervention for patients in that it allows nurses to reinforce the patients' quality of life (QOL) and satisfaction with care received. Thus, the quality of the nurse's caring relationship becomes a major factor in patient health and an indicator of the quality and security of care (Duffy & Hoskins, 2003). Moreover, this theoretical model has allowed researchers to select the



variables to consider when studying nurses and patients. These variables will be described below.

More specifically, the Quality-Caring Model (Duffy & Hoskins, 2003) comprises three components of Donabedian's (1973) analytical framework, namely, structure, process, and outcomes. For Duffy and Hoskins (2003), the structure refers to all elements that precede the care delivered (i.e., the educational intervention in our case), be it for the nurses, the patients, and the healthcare system. Within the context of the pilot study, the variables selected related to the sociodemographic characteristics of the stakeholders present (nurses and patients) as well as variables that could be targeted after the educational intervention (nurses' caring attitudes/behaviors, patients' QOL). Process represents, for Duffy & Hoskins, the core of the theory and regards the nurses' clinical practice, particularly with respect to the caring relationship that they develop with each cared-for person. For our pilot study, an educational intervention was developed based on the concepts of Watson's (2008, 2012) theory of human caring in the aim of strengthening the humanistic practices of HD nurses, and the intervention's feasibility and acceptability were examined. Outcomes, the last component of the theory, fall into two categories: intermediate and terminal. For Duffy and Hoskins (2003), intermediate outcomes correspond to a change in attitudes/behaviours that can occur as much in the caregiver, the patient or the organisation, resulting in changes in the approach to patients' clinical follow-up (St-Germain, 2007). In our study, the intermediate outcomes corresponded to changes in caring attitude/behaviour perceived by the participating nurses following the educational intervention, as well as changes in nurses' caring attitudes/behaviours perceived by the patients undergoing HD following the educational intervention. The terminal outcomes are those major end-result concepts that affect the future, such as QOL and satisfaction with care (Duffy & Hoskins, 2003). Within the framework of our study, QOL of patients undergoing HD was chosen because it appears, according to the literature consulted, to be a key outcome variable for this frail population.

Finally, the following hypotheses were formulated based on the theoretical framework chosen: (a) Following the educational intervention

delivered to the participating nurses, the frequency of caring attitudes/behaviours would be higher at immediate posttest than at pretest; (b) Following the educational intervention delivered to the participating nurses, the frequency of nurses' caring attitudes/behaviours, as perceived by the patients undergoing HD, would be higher at all posttest times of measurement than at pretest; and (c) Following the educational intervention delivered to the participating nurses, level of QOL of patients undergoing HD would be higher at all posttest times of measurement than at pretest.

Method

Design

This pilot study used a preexperimental one group pretest posttest design with repeated measures (see Figure 1) prior to the intervention (T0), immediately after the intervention (T1), and three and six months after the intervention (T2 and T3, respectively). The quantitative measures at pretest (T0) and immediate posttest (T1) examined, among the participating nurses, certain elements of the feasibility and acceptability of the intervention delivered as well as its preliminary effects on them. In addition, certain quantitative data were collected by the researchers throughout the delivery of the intervention in order to complete certain elements related to the educational intervention's feasibility (e.g., *Was the training provided in adequate facilities?*). The repeated measures (T2 and T3), instead, examined changes in the participating nurses' attitudes/behaviours as perceived by the patients undergoing HD and changes associated with patient QOL. In order to gain a thorough understanding of the educational intervention's feasibility and acceptability and its effects on the participating nurses, qualitative data were collected from the nurses concurrently with the quantitative data collected at T1.

From an ethical point of view, each nurse working in the hemodialysis unit received, during a briefing organized by the researchers, an information form indicating the purpose of the study, the procedures used to ensure anonymity, their right not to participate or to withdraw at any time from the research without having any impact on their careers. To assure anonymity of the participants, a code was assigned to each, so that names do not appear on any form, interviews or

memo. In addition, a schedule of the intervention was provided to each participant with dates, location, and content to be discussed. The schedule was done in collaboration with the unit nurse manager to consider their availability. In addition, “training time” was considered by the institution as “working time.” Allowing some time to reflect, nurses wishing to participate in the study transmitted, in a postage-paid envelope, their dated and signed consent form. Participants were then contacted to plan the different meetings required for the study. Researchers obtained the ethic certificate from the Human Research Ethics Review Board of the Canton of Vaud (Switzerland).

Participants

The study population included all the nurses working in the HD unit of a hospital in the Canton of Vaud (Switzerland), as well as a convenience sample of patients receiving HD care in the same unit. The nurses ($n = 10$) all met the following inclusion criteria: (1) at least six months' experience working in the HD unit selected; (2) willingness to participate in a study; and (3) ability to understand and write French. The only exclusion criterion was not being available for the training sessions. The patients undergoing HD ($n = 42$) had to meet the following inclusion criteria: (1) being treated for at least six months prior to T0 (first time of measurement) at the HD unit of the hospital in the Canton of Vaud, where the study was being conducted; (2) being in a period of receiving active treatments; (3) being fit to provide an informed consent; and (4) having the ability to understand and write French. The six-month period prior to the first time of measurement was established to ensure that patients had been exposed to the healthcare team for a reasonable amount of time. The only exclusion criterion was the intention to change healthcare establishment in the coming months. The involvement of both, the physician and the head nurse of the HD unit facilitated recruitment of the patients. These two persons began by drawing up a list of eligible patients undergoing HD based on the inclusion criteria. Then, the head nurse informed each eligible person individually of the research project. Moreover, she handed them an informative letter and a consent form. Patients who signed the consent form were included in the study ($n = 22$) and were met during a regular HD session by one of the researchers to complete the questionnaire.

Intervention description

Guided by Watson's (1988, 1999, 2006, 2008, 2012) theory of human caring, the development of the educational intervention was originally done in Quebec (O'Reilly & Cara, 2011; O'Reilly, Cara, & Delmas, 2016) with rehabilitation nurses working with spinal cord injury. The authors focused on the choice and definition of the theoretical concepts to

be taught and on the creation of learning activities (O'Reilly & Cara, 2011), which were deemed indispensable to foster optimum appropriation of the concepts selected and their applicability within the clinical care context of spinal cord injury (Quebec) then in hemodialysis (Switzerland). Experts in humanist philosophy and experts in the population under study (both spinal cord injury, for Quebec and hemodialysis, for Switzerland) validated the pedagogical content. In Switzerland, the two principal researchers of the study delivered the educational intervention. Each had substantial clinical experience with persons living with a chronic condition and had previously taught Watson's (2008, 2012) theory of human caring. The intervention was partitioned into four sessions each 3.5 hours long spread over a period of three weeks, with each session delivered twice in order to maintain groups of four to five persons together (O'Reilly & Cara, 2011; O'Reilly & Delmas, 2014; O'Reilly, Cara, Delmas, 2016).

Measures

HD nurses. Sociodemographic data. At pretest (T0), personal data (sex, age) and work-related information (employment status, years' experience as a HD nurse, number of patients attended to per work shift) were collected.

Intervention feasibility. To explore the feasibility of the educational intervention, various elements were collected by the researchers at the end of each training session, such as participant recruitment (number of eligible participants who enrolled in the pilot study), attendance (number of intervention sessions attended), and participant retention (number of participants who completed all intervention sessions). Additional qualitative data were collected from nurses to explore the relevance of the educational intervention's partitioning over four sessions and its organisational aspects.

Intervention acceptability. Intervention acceptability was assessed quantitatively and qualitatively with the participating nurses. For the quantitative evaluation, the French-language version (Paradis, Cossette, Frasure-Smith, Heppell, & Guertin, 2010) of the *Treatment Acceptability and Preference Questionnaire (TAPQ)*; (Sidani, Epstein, & Miranda, 2006) was used. Participants were asked to rate the intervention in terms of four attributes: appropriateness, suitability, effectiveness, and willingness to comply. Each attribute was covered in a separate item for a total of four. Paradis (2009) added an item to evaluate general satisfaction with the approach being tested. Consequently, the French-language version of the instrument comprised five items. The possible range of the total scale score was 0 (not at all) to

4 (very much), with a high score reflecting high acceptability. The Cronbach's alpha coefficient was at .68 for the French-language version (Paradis et al., 2010). By Streiner and Norman's (1995) standards, a Cronbach's alpha coefficient of .70 to .90 is considered acceptable. For the qualitative evaluation, semistructured interviews were conducted with each participating nurse immediately following completion of the intervention (T1). These interviews served to collect their perceptions regarding the relevance of the educational intervention, the content taught, and the learning activities used. Finally, nurses were asked a question to explore perceived changes in their clinical practice, which allowed exploring the appropriation of the content taught and its application in their daily practice.

Nurse-patient interactions. The nurse-patient interactions were measured with the *Échelle d'Interactions Infirmière-Patient (EIIP-70)*; (Cossette, Cara, Ricard, & Pepin, 2005), the French-language version of the Caring Nurse-Patient Interaction Scale (CNPI-70). This scale comprises 70 items across ten subscales that capture each of Watson's (1979, 1988) ten carative factors. It allows nurses to self-evaluate the frequency of their caring attitudes/behaviours. The ten subscales are labelled as follows: F1-humanism (6 items), F2-hope (7 items), F3-sensitivity (6 items), F4-helping relationship (7 items), F5-expression of emotions (6 items), F6-problem solving (6 items), F7-teaching (11 items), F8-environment (7 items), F9-needs (10 items), and F10-spirituality (6 items). Respondents can choose from five possible answers, ranging from 1 (almost never) to 5 (almost always). This instrument, which was validated on 377 nursing students, has demonstrated good psychometric properties, with Cronbach's alphas for each of the 10 subscales and for each item ranging from .73 to .91 (Cossette et al., 2005).

Patients undergoing HD. Sociodemographic data. Some information was collected from the patients at pretest (T0), including sociodemographic characteristics (age, sex, marital status), presence of comorbid conditions (cardiovascular disease, diabetes, hypertension), and certain biological data (serum albumin, haemoglobin).

Nurse-patient interactions. Nurse-patient interactions were measured with the EIIP-70 for the patients as well (Cossette et al., 2005). This scale allowed the patients to evaluate nurses' caring attitudes/behaviours, as they perceived them. The instructions for completing the scale were modified as recommended by Cossette (2006) in order to adapt them to the point of view of the persons cared-for.

Quality of life. Patients' subjective QOL was assessed with the French-language version (Lepège, Réveillère, Ecosse, Caria, & Rivière, 2000) of the WHOQOL-BREF, an abridged version of the 100-item World Health Organization Quality of Life instrument. The short version comprises 26 items, two of which serve to explore overall QOL and general health specifically. The other 24 items fall under four domains: physical health (seven items), psychological health (six items), social relationships (three items), and environment (eight items). All items are rated on a 5-point scale from 1 to 5, with higher scores indicating better QOL. The domain scores were converted to transformed scores (0-100 scale). The instrument has been shown to possess good discriminant and content validity, as well as a good test-retest reliability and a high internal consistency (WHOQOL Group, 1998). The French language translation was validated (Lepège et al., 2000) on French-speaking patients ($N = 2102$) with neuromuscular disorders and has been proven to possess satisfactory psychometric properties (Cronbach's alpha above .65 for each dimension and good acceptability by the population with less than 5% of nonresponses).

Data collection. Information sessions were conducted by one of the two principal researchers with the physician in charge of the unit, the head nurse, and the nurses participating in the study. Next, a meeting was organised with all the nurses of the HD unit involved in the study in order to obtain their consent and plan the training sessions and the different times of data collection. Consequently, at pretest (T0), the nurses completed a sociodemographic questionnaire and the EILP-70 scale (Cossette et al., 2005). Then, 21 days following completion of the educational intervention (T1), the participating nurses completed the EILP-70 scale (Cossette et al., 2005) once again and took part in individual interviews aimed at exploring their perceptions of the relevance of the education intervention's content and acceptability, and changes they made to their clinical practice following the training sessions. The data collected from the nurses were transcribed by a research assistant. At the same time, data were collected from the patients. The questionnaires, including the French-language versions of the EILP-70 scale (Cossette et al., 2005) and of the WHOQOL-BREF (Lepège et al., 2000), were administered by a research assistant during HD sessions at the different times of measurement (T0, T2, T3). The research assistant remained at their disposal to assist them, at their request (e.g., to explain certain questions or even read out all the items of the questionnaire).

Data analysis. The quantitative data were analysed using STATA version 12.0. First, the quantitative variables were described using the following statistics: minimum, maximum, range, mean, standard deviation, median, and interquartile range (IQR). The qualitative variables were described using frequency tables with counts and percentages. Spearman's correlations were calculated to verify the link between variables of interest and ordinal or quantitative sociodemographic variables. To test differences in variables of interest between modalities of nominal variables (respectively, two and more than two modalities), Mann-Whitney or Kruskal-Wallis nonparametric tests were run. In order to compare the sociodemographic variables of the nurses and the patients in our pilot study with those of a recent study by Delmas and Cohen (2012) involving a larger sample of nurses and patients undergoing HD, Mann-Whitney tests or a chi-squared tests of independence was carried out. Then, nonparametric tests (Wilcoxon matched-pairs signed-rank test) were carried out to examine changes observed (between pretest and posttest) for each dimension of the variable *nurse-patient interaction* among the nurses (T1-T0) and the patients (T3-T0). Parametric tests (T Tests for paired data) were performed to study the changes to emerge for the variable QOL among the patients (T3-T0). Statistical tests were considered significant at a p value equal to or less than 5%.

The process of analysis and abstraction of the qualitative data (individual interviews) was informed by the Cara's *Relational Caring Inquiry* (RCI) phenomenological method which is qualified as relational, dialogical, transformative and caring (Cara, 1997, 1999, 2002; O'Reilly & Cara, 2014). It is composed of seven inter-related dynamic steps and is rooted in the works of Husserl's phenomenology, Watson's philosophy of caring and Gadow's narrative inquiry (Cara, 1997). This phenomenological method is used to describe and comprehend phenomena of interest in nursing and any other health discipline. As part of our pilot study, a content analysis of the transcripts of the participating nurses was carried out in order to identify units of meaning (first level of reflection). Then, these units were grouped under subthemes (second level of reflection) that corresponded to the descriptive elements reflecting as much as possible the participants' transcripts. Finally, the subthemes identified were grouped into themes (third level of reflection) based on the convergence of ideas to emerge from the transcripts. The first level of analysis was performed by a research assistant, who was competent in content analysis of *verbatim*. The principal researchers then reviewed the complete process. Then, the second and third levels of abstraction were performed by one of the researcher, specialist in phenomenological

methodology. The other researchers, competent in qualitative analysis, proceeded simultaneously to validate (according to Whittemore, Chase, & Mandle's (2001) rigor's criteria for qualitative analysis) the findings in order to reach the final essential structures of the phenomenon.

Results

Participants

HD nurses. The nurses participating in the study ($n = 9$) had the following demographic profile: Mean age was 48 ± 10.6 years and 78% worked part-time. They had 12 ± 4.3 years of HD experience, which exceeded the average seniority (9 years) of all the nurses working at the hospital in question. They had three patients in their care during their work shift. These data were compared against those of a broader study involving 40 HD nurses in the Canton of Vaud, Switzerland (Delmas & Cohen, 2012). The results revealed no statistically significant difference between the two samples in terms of sociodemographic characteristics.

Patients undergoing HD. Of the 42 patients undergoing HD at the unit retained for the study, only 30 met the inclusion criteria and 22 agreed to sign the consent form. At T3, the number of patients who completed the questionnaires was down to 16. The main reasons for refusing or dropping out had to do with fatigue. Mean age of the patients undergoing HD was 67.0 ± 17.3 years. Nearly 77.2% were men. The majority of the patients was married (73.7%) and essentially retired or reported no professional activity (77.1%). They had been on HD for 8.5 ± 2.3 years, and 18.1% were on the transplant waiting list. Regarding medical history, 27.3% of the patients suffered from heart failure or hypertension and 18.1% from diabetes. These data were compared with those of a broader study involving 119 patients undergoing HD in the Canton of Vaud, Switzerland (Delmas & Cohen, 2012). No statistically significant differences emerged in terms of sociodemographic characteristics. However, the percentage of patients undergoing HD living with diabetes or hypertension was significantly lower in our pilot study (respectively, $p = .05$, and $p = .009$). Finally, no statistically significant relationship was noted between sociodemographic, medical and biological variables, on the one side, and the variables of interest, on the other.

Intervention Feasibility

Nine nurses took part in the entire educational intervention consisting of four 3.5-hour sessions. They completed the questionnaires at both times of measurement, and eight of them participated in the individual qualitative interviews. These various indicators suggest a high level of feasibility for the

intervention (Feeley et al., 2009). On the qualitative side, phenomenological analysis (Cara, 1997; O'Reilly & Cara, 2014) of the *verbatim* allowed the emergence of a theme associated with the intervention feasibility.

General Satisfaction with the Organisational Aspects of the Intervention

This theme concerned general satisfaction with the organisational aspects of the educational intervention. On the whole, participating nurses reported that the intervention was offered at a timely moment and that the intervention's partitioning, the time interval between sessions, and the place of delivery were all satisfactory. Here is a statement to the fact that the intervention was offered at the right time for the nurses of the HD unit: "Well, I sure think so. It was then or never because there were problems brewing inside the unit, which is why everyone was a little stressed out" (Éléonore, lines 29-31). In addition, they mentioned that the educational intervention could be adapted and generalised to other care units.

Intervention Acceptability

Results regarding the intervention's acceptability as perceived by the participating nurses (*n* = 9) are summarised in Table 1. Generally speaking, the majority of the items on the TAPQ (Sidani et al., 2006) were rated 3 (a lot) or 4 (extremely). Accordingly, all of the participating nurses found the intervention appropriate and suitable to their context. Moreover, they stated that the intervention was useful for their clinical practice and expressed a high degree of general satisfaction with the approach proposed. Consequently, the educational intervention presented a high degree of acceptability for the nurses participating in the study.

On the qualitative side, phenomenological analysis of the transcripts of the individual qualitative interviews (*n* = 8) revealed the emergence of two themes associated with the educational intervention's acceptability.

Intervention's Contribution to a Humanistic Nursing Practice

This theme concerned the participating nurses' satisfaction with the learning activities and the relevance of the educational intervention's content. First, regarding learning activities, the interview transcripts revealed that the nurses were satisfied with the use of role playing and clinical vignettes. Moreover, some nurses mentioned that the small groups were effective for learning, as illustrated by the following excerpt:

"The groups were small, any bigger would be a mistake. Being in a group encourages

Table 1
Acceptability Ratings (N = 9)

Items	Possible responses	N (%)
How much did this type of approach seem appropriate (suitable) to you?	Extremely	7(78%)
	A lot	2(22%)
	Moderately	0(0%)
	A little	0(0%)
	Not at all	0(0%)
How much did this type of approach seem acceptable to you?	Extremely	7(78%)
	A lot	2(22%)
	Moderately	0(0%)
	A little	0(0%)
	Not at all	0(0%)
How much did this type of approach seem useful for your practice?	Extremely	6(67%)
	A lot	3(33%)
	Moderately	0(0%)
	A little	0(0%)
	Not at all	0(0%)
If this project were to be done over again, how much would you be willing to receive this type of approach?	Extremely	7(78%)
	A lot	2(22%)
	Moderately	0(0%)
	A little	0(0%)
	Not at all	0(0%)
How much are you satisfied with this approach? ^a	Extremely	7(78%)
	A lot	2(22%)
	Moderately	0(0%)
	A little	0(0%)
	Not at all	0(0%)

Note. ^a Question regarding general satisfaction added by Paradis (2009)

exchanges quite a bit, not a big one, mind you, it needs to be restrained. Because it allows you to speak up, which isn't always the case when there are 15 in the bunch and there's always one or two who never talk,

never say a word, aren't interested" (Denise, lines 137-143).
As for the relevance of the content taught in the educational intervention, some of the participating nurses pointed out that the intervention promoted

their holistic vision of the person cared-for and the nontechnical aspects of their work. In fact, they shared that this new insight confronted their daily practice, giving them a common renewed caring perspective on their work. Here is what one nurse had to say about his holistic approach:

“Yeah, I don't need any more convincing because, in any event, I've been thinking about it for a while now that you need to approach people as complete beings and that we can't consider a disease for what it is—you know?—we're dealing with individuals with their own history, their own life, and the disease latches on to this. . . I prefer to look at it this way” (Albert, lines 35-41).

Elements to Reflect Upon in Order to Sustain Humanistic Practice

This second theme related to the need to diversify learning activities and to address certain administrative obstacles to the implementation of a humanistic nursing practice. Regarding the diversification of learning activities, some participants expressed the need to present a larger number of concrete examples and the wish to see patients involved in the training, and pointed out the usefulness of a team meeting at the end of the intervention. One nurse had this to say in this regard: “I think it would have been nice to have even more concrete examples of problems that can arise so that we might try to find some solutions to them, actually” (Sylvain, lines 2-6). As for the administrative obstacles, some participants argued that the calculating logic (*beans-counting*) was incompatible with a humanistic practice, while others pointed to administrative contradictions detrimental to it. In this regard, one participant had this to say:

“Plus, on top of that, what you hear all the time is 'one nurse to three patients,' which comes down to saying that all patients are the same and that all nurses are the same. This alone, it's not humane, for starters, it's bean counting, everything's beans counting, and, well, the moment it's reduced to beans counting. . . I remember this patient, this one time, who was having a hard time. Well, there were four of us around him. There you go, right? We all know it, patients aren't beans” (Béatrice, lines 101-110).

Preliminary Effects of the Educational Intervention

HD nurses. Results of the EEIP scale (see Table 2) showed that, at pretest (T0), the scores for six of the ten dimensions of the scale were greater than 3, indicating that the participating nurses very often adopted caring attitudes/behaviours with the patients undergoing HD. At posttest, most of the scores were higher and significantly so for the following dimensions: F1-humanism ($p = .008$), F2-hope ($p = .008$), F3-sensitivity ($p =$

Table 2

Difference in Scores Between T0 and T1 for Different Dimensions of EEIP Scale Among Participating Nurses (N = 9)

Dimensions of EEIP-70 scale	Pretest (T0) Median (IQR)	Difference (T1-T0) Median (IQR)	P+/P-*	p-value
F1-humanism	4.1(3.66; 4.33)	0.33(0.17; 0.33)	8/0	.008
F2-hope	3.14 (2.71; 3.57)	0.43(0.14; 0.57)	8/0	.008
F3-sensitivity	2.33(2.33; 3.00)	0.17(0.17; 0.67)	7/0	.016
F4-helping relationship	3.57(3.14; 4.00)	0.14(0.14; 0.86)	8/0	.008
F5-expression of emotions	3.50(3.16; 3.50)	0.17(-0.50; 0.33)	5/4	1.000
F6-problem solving	2.66(2.50; 3.33)	0.17(0.17; 0.67)	7/1	.070
F7-teaching	3.11(2.77; 3.55)	0.33(0.11; 1.00)	8/1	.039
F8-environment	4.42(2.57; 4.57)	0.14(0.00; 0.43)	5/2	.453
F9-needs	3.60(3.40; 4.10)	0.50(0.10; 0.60)	7/1	.070
F10-spirituality	2.66(2.16; 3.57)	0.33(0.17; 0.33)	8/1	.039

Note. * P+: number of times score was higher at posttest than at pretest; P- : number of times score was lower at posttest than at pretest. Significant results are in bold.

.016), F4-helping relationship ($p = .008$), F7-teaching ($p = .039$), and F10-spirituality ($p = .039$). Thus, following the educational intervention, the participating HD nurses integrated caring attitudes and behaviours more often in clinical practice when caring for patients.

On the other side, our analysis of the qualitative interviews highlighted two themes that reflected the preliminary effects (perceived changes) of the educational intervention on the humanistic practice of the participating nurses.

Reflective Nursing Practice Centered on the Cared-for Person

This is the first theme related to changes in the nurses' clinical practice following the educational intervention. More specifically, this theme referred to intensifying the process of reflection on one's own practice and to shifting the focus of care toward the person cared-for. Furthermore, some participants spoke of a heightened personal and collective process of reflection and an accentuated effort to understand each patient's perspective. Moreover, some nurses noted changes in their ways of being and doing, as well as in how they communicated with patients and families. The following transcript excerpt illustrates the matter: “I might try to dig a little deeper now, especially when I get the feeling that things aren't right with a patient, I'll try to push things a little further to see what happens” (Albert, lines 28-34). For its part, refocusing care

on the cared-for person documented the centrality of the patient in the delivery of nursing care. In this regard, some participants mentioned that dialogue, follow-up and listening with patients had improved, that care had become more personalised, and that they perceived greater coherence in the care provided. One nurse had this to say on the subject:

“Communication has always been a strong suit of mine, but now I try to go even more in depth. I like communicating with patients in general, and this allows me as a result instead to open my eyes and push things a little further. . . give them the chance, if they want to, to express themselves, to talk about what worries them, their everyday life” (Francine, lines 31-36).

Individual and Collective Practice Enriched

This second theme concerned the activation process and the benefits at both the individual and collective level, essential before the implementation can take place on the unit. First, the activation process put into perspective the effects of the educational intervention on the individual and collective organisation of work, the care team's dynamism as well as illustrated the necessity of rallying the team to further change (e.g., the implementation, in the future, of an individualised data file for each patient). Here is an excerpt in this regard: “I'm essentially satisfied with the intervention because it will allow us to

Table 3

Difference in Scores Between T0 and T3 for Various Dimensions of EIIP Scale Among Participating Patients Undergoing HD (N = 22)

Dimensions of the EIIP-70 Scale	Pretest (T0) Median (IQR)	Difference (T3-T0) Median (IQR)	P+/P-*	p-value
F1-humanism	4.25(3.50; 4.83)	0.75(0.08; 1.33)	12/0	<.001
F2-hope	4.00(2.57; 4.85)	0.79(0.07; 1.93)	12/2	.013
F3-sensitivity	3.66(2.00; 4.33)	1.08(0.55; 2.42)	13/2	.007
F4-helping relationship	3.50(3.00; 4.42)	1.36(0.57; 1.79)	13/3	.021
F5-expression of emotions	3.75(2.83; 4.66)	0.83(-0.25; 1.7)	11/5	.210
F6-problem solving	3.16(2.50; 4.33)	0.92(-0.17; 1.8)	11/4	.119
F7-teaching	3.88(3.57; 4.50)	0.94(0.11; 1.67)	13/2	.007
F8-environment	4.14(3.66; 4.57)	0.71(0.07; 1.00)	12/3	.035
F9-needs	4.30(3.70; 4.70)	0.40(0.15; 1.25)	13/0	<.001
F10-spirituality	3.33(2.00; 3.66)	1.42(0.50; 2.42)	14/1	<.001

Note. * P+: number of times score was higher at posttest than at pretest; P-: number of times score was lower at posttest than at pretest; Significant results are in bold.

advance and change the mentality within the organisation a little, our approach to patient management” (Denise, lines 218-221). Second, individual and collective benefits were described as a sense of comfort perceived by the care team following the educational intervention, a sense of personal enrichment, and a higher sense of the meaningfulness of their work. The following excerpt referred to the sense of personal enrichment: “Well, it’s only right that I should learn more about people. Plus, it’s enriching” (Francine, lines 29-30).

Patients undergoing HD. Nurse-patient

interactions. The patients undergoing HD (n = 22) completed the EIIP-70 scale (Cossette et al., 2005) at T0 and T3. The results (see Table 3) demonstrated that, at pretest, the patients perceived that their attending nurses adopted caring attitudes/behaviours very often. Six months following the educational intervention, the results associated with the dimensions of the EIIP-70 scale were higher and statistically significant, with the exception of two dimensions, namely, F5-expression of emotions and F6-problem solving. In other words, the patients undergoing HD discerned significant changes in the frequency of nurses’ caring attitudes/behaviours subsequent to the intervention.

Quality of life. The patients undergoing HD (n = 22) also completed the French-language version of the WHOQOL-BREF scale (Lepège et al., 2000) at T0 and T3. Results (see Table 4) showed no statistically significant difference between mean scores obtained at T3 and T0, with the exception of the domain of physical health, where a significant decline was observed at T3 ($\chi^2 = -10.27$; $p = .074$). Put otherwise, the physical QOL of the patients who took part in the study saw their QOL related to physical health deteriorate over a six-month period.

Table 4

Difference in Mean Scores Between T0 and T3 for Overall Score and Different Dimensions of the WHOQOL-BREF Scale Among Participating Patients (N = 22)

WHOQOL-BREF domains	Pretest (T0) Mean ± SD	Difference (T3-T0) Mean ± SD	p-value
Physical health	60.94 ± 18.70	-10.27 ± 21.38	.074
Psychological health	64.90 ± 16.99	2.81 ± 17.55	.531
Social relationships	65.10 ± 15.58	4.17 ± 19.00	.394
Environment	67.49 ± 17.75	6.14 ± 16.30	.153
Overall/QOL/Health	53.13 ± 22.59	-0.7 ± 24.35	.900

Note. Significant results are in bold.

Discussion

Intervention Feasibility

According to Cole and Dendukuri (2004), the central elements when examining an intervention’s feasibility necessarily have to do with recruitment, attendance, and retention. Our results demonstrate that the proposed intervention enjoyed a high level of feasibility. Indeed, the researchers noted no absences or late arrivals at the different sessions during delivery of the educational intervention. All participating nurses received the entire content of the intervention as intended by the researchers. In other words, the pre-established intervention sessions were delivered in full (Sidani & Braden, 2011). It need be reminded that, though the nurses took part in the pilot study on an entirely voluntary basis, the proposed subject struck a chord in them so much so that they were quick to adhere to the project. This point should not be overlooked in the current context of care, as it clearly reflects the fact that caring is at the heart of nurses’ reflections and practice, a point long acknowledged by Watson (1999, 2008). Furthermore, the researchers developed communication strategies with care management in order to facilitate project implementation. Management, for its part, made available a venue at once suitable, which allowed developing an intimate relationship with the participants, and close to the hospital. In addition, management figured the hours spent in the intervention should be considered hours of work for each nurse. This sent a strong message that management was committed to the project, which contributed to reinforce the study’s feasibility. On the qualitative side, the results documented general satisfaction with the organisational dimensions of the educational intervention (i.e., timing, sequencing, inter-session interval). Finally, the qualitative results indicated that the intervention could be

generalised by adapting it to clinical context and environment.

Intervention Acceptability

According to Sidani and Braden (2011), an intervention's acceptability depends on the participants' perception of the treatment in question (i.e., the educational intervention in our case). Indeed, their perception will influence their interest in the intervention, their adherence to it, and expected outcomes. In our study, acceptability was explored through the French-language version (Paradis, 2009) of the TAPQ (Sidani et al., 2006). The participating nurses deemed the proposed educational intervention appropriate and suitable to their clinical context and expressed a high degree of satisfaction with it, thereby attesting to a high level of acceptability. Although various studies (Becker et al., 2008; Blum, Hickman, Parcels, & Locsin, 2010; Erci et al., 2003; Herbst, 2012; Julian & Bott, 2012; Ryan, 2005; Wu, Chin, & Chen, 2009) have mentioned the relevance of developing interventions based on a caring approach in order to strengthen nursing students' and nurses' caring attitudes/behaviours, few evaluated proposed interventions in terms of acceptability. Yet, for Feeley and colleagues (2009), this step is indispensable prior to considering a clinical trial because a pilot study serves to provide researchers with information on the strengths and weaknesses of a proposed intervention and thus to make any necessary adjustments beforehand. This is a key contribution of our study, as the researchers will be able, in light of the results obtained, to reinforce certain elements of the educational intervention, such as the introduction to simulation technology (Jeffries, 2005). Indeed, certain interventions developed with RN-BSN students (Blum et al., 2010) have used this approach as a teaching method, which today is still a relatively new concept in nursing education. However, results obtained have shown significant reinforcement of RN-BSN students' caring attitudes/behaviours following the use of simulation technology. Finally, according to Fan, Sidani, Cooper-Brathwaite and Metcalfe (2013), a high level of acceptability for a pilot study could contribute to improve attendance and compliance among participating nurses and, in turn, to bolster the study's degree of feasibility.

On the qualitative side, one result revealed that the intervention contributed to develop a humanistic nursing practice. This reflected the relevance of the content taught, which valorised a holistic vision of the cared-for person and the nontechnical dimension of nursing work. The education content also offered these nurses a common unit orientation. All this is congruent with the views of certain authors. For example, according to Bennett (2011), as HD nurses work in a technical care environment, they must

develop both technical and interpersonal skills in order to offer quality care in their particular clinical context. This author has specified also that the technical dimension is only one part of care, not all of it. For Ryan (2005), implementation of Watson's (2008, 2012) theory of human caring allowed the emergence of a common vision and language among nurses, which contributed to sustain and guide their professional activities. In this regard, our proposed educational intervention met the expectations of the participating nurses, a key factor in acceptability. The qualitative outcome titled "elements to reflect upon in order to sustain humanistic practice" revealed the need to diversify learning activities and identify the administrative obstacles to intervention implementation. Where the diversification of pedagogical activities is concerned, clinical simulation is a very interesting strategy in that it allows learners to apply, evaluate and synthesise their developing knowledge and to examine what can be transferred to clinical practice (Delmas & St-Pierre, 2013). According to Ironside, Jeffries, and Martin (2009), this immersion experience in a similar clinical situation of field realities help boost the nurses' skills in the affective, cognitive and psychomotor domains, all of which are essential to a humanistic nursing practice. In this study, the researchers did validate the simulation scenarios by clinical experts within the field of hemodialysis. Although there seems little written on strengthening nurses' caring attitudes and behaviours through simulation activities, Diener and Hobbs (2012) pointed out the added value of using simulation with nursing students to learn Watson's transpersonal caring relationship. Consequently, and following the arguments presented above, the addition of a simulated clinical situation with a standardized patient (comedian), that would afford participants the chance to exercise their know-how related to the caring approach, seems most appropriate. Finally, two obstacles to implementing the educational intervention were mentioned by a few participants, namely, the beans-counting mentality and administrative contradictions. This finding corroborates the views of various authors (Aiken, Clarke, Sloane, Lake, & Cheney, 2009; Dallaire & Dallaire, 2008; Duffy, 2009; Ryan, 2005). For example, Dallaire and Dallaire (2008) stressed that care took time because nurses must dispense technical nursing care and maintenance care while considering the cared-for person as a unique human being with specific needs. In sum, even though this educational intervention demonstrated a high degree of acceptability, it seems legitimate to suggest that future research will need to examine how to optimise its pedagogical sequences with the use of simulation (Jeffries, 2005), taking account of the constraints imposed at times by the healthcare system. To this end, it would be necessary to investigate the

various aspects of the work environment in which nurses practice.

Preliminary Effects of the Intervention on HD Nurses

The quantitative results revealed that the majority of the participating nurses strengthened their caring attitudes/behaviours with patients undergoing HD, particularly those related to three dimensions: F1-humanism, F2-hope, and F3-sensitivity. These dimensions represent the humanistic foundations of Watson's (2008, 2012) theory of human caring. In this regard, the proposed educational intervention allowed the participating nurses to consolidate their humanistic belief system, which constitutes a cornerstone for inducing change in nurses' caring attitudes/behaviours. These results corroborate those of other studies (Becker et al., 2008; Blum et al., 2010; Herbst, 2012; Wu et al., 2009) that examined interventions based on Watson's theory of human caring, intended for nursing students and nurses. Consequently, such a result bolsters the notion that, like students, nurses can reinforce their humanistic practice throughout their professional career. Also, the results showed a significant increase in caring attitudes/behaviours pertaining to dimensions F4-helping relationship, F7-teaching, and F10-spirituality, which correspond to the scientific foundations of Watson's theory. In this regard, Watson (1979, 1988) stressed that the development of therapeutic relationships by nurses depended on their adopting the humanistic foundations of her theory. Accordingly, following the educational intervention, the participating nurses engaged in active listening and took an interest in their patient more often. Similarly, Cossette and colleagues (2006) mentioned that transpersonal teaching-learning was used in particular within the framework of therapeutic relationships, which might explain why, following the educational intervention, the participating nurses paid particular attention to imparting teachings according to the needs of the patient and at a pace that agreed with the person. Finally, Watson (2008, 2012) mentioned that developing a therapeutic relationship required that nurses take into account patients' individual perceptions of their lived experience as well as their meaning of it. This element might explain the fact that, following the educational intervention, the participating nurses were more likely to consider the priorities of their patients and to help them give a meaning to the situations they were going through. Lastly, the results obtained can little be compared with those of other studies (Herbst, 2012; Wu et al., 2009), since the design of the pilot study, the design of educational intervention (e.g., its delivery and duration, the clinical vignettes used), the Francophone context in which the study took place and the instruments

used are all elements that distinguish it and limit the comparison of results with other studies.

The qualitative results corroborate the quantitative results discussed above while shedding new light on them. Indeed, one of the qualitative results highlighted the fact that clinical practice grew more reflective and centered on the cared-for person. In our opinion, this preliminary effect might be explained by the incorporation of reflective practice (Schön, 1994) in the learning activities elaborated and used in the course of each training session (e.g., reflective clinical case reports, role play). These reflective activities fostered the creation of space for dialogue; reflection on self and one's practice (sharing of clinical experiences); recognition of desired behavioural change in future practice; and commitment toward acquiring humanistic values, attitudes, and behaviours (Cara & O'Reilly, 2008). This result might also reflect the large amount of time dedicated during the first training session to Buber's (1970a, 1970b) *I-Thou* relationship, which attributes a lot of importance to the individual's subjective reality (e.g., the cared-for person's perceptions). One must not overlook the qualitative result documenting the fact that both individual and collective practice was enriched. This finding, which refers to a sense of personal enrichment and to a higher sense of the meaningfulness of work, is in keeping with those reported in Ryan (2005) where, following implementation of Watson's (2008, 2012) theory of human caring, nurses realised what their unique contribution to the healthcare system meant. Similarly, Cara and O'Reilly (2008) discussed the fact that, when nurses based their clinical practice on Watson's theory, this could contribute to boost their sense of professional achievement. Finally, the educational intervention delivered to the participating HD nurses reinforced their humanistic care practices toward their patients. This constitutes a salient result of our study and represents, according to Bevan (1998), one of the principal sources of patient satisfaction with HD care.

Preliminary Effects of the Intervention on Patients undergoing HD

At pretest, the high scores on the EILP-70 scale showed that the patients undergoing HD perceived that nurses frequently adopted caring attitudes/behaviours when attending to them. This finding corroborates that of Papastavrou and colleagues (2012), whose study compared patients and nurses from six European countries in terms of their perceptions of nurses' caring attitudes/behaviours. Moreover, these authors pointed out that their results might reflect the high importance that cared-for persons ascribed to nurses' caring attitudes/behaviours. Other authors (Bevan, 1998; Bennett, 2011), too, found this to be the case for patients undergoing HD. In

addition, at posttest (T3), the patients perceived changes in the participating nurses' caring attitudes/behaviours pertaining to the majority of the dimensions derived from both the humanistic and scientific foundations of Watson's theory of human caring. This is an extremely interesting finding that highlights the extreme sensitivity of patients to changes in the humanistic attitudes/behaviours of HD nurses even when nurses are already perceived at the outset to engage in humanistic practices to a high degree. In this regard, as pointed out by Bevan (1998), a nurse's active listening, support, response to needs, and presence are the attitudes and behaviours that patients undergoing HD need in a universe dominated by technology. This result might also be explained by the fact that our patients had been attending the HD unit three times a week for a number of years. Being in regular contact with the participating nurses no doubt afforded them a very fine vantage point from which to observe any behavioural changes in them.

Finally, these results do not corroborate those of Herbst (2012), where patients perceived no significant change in nurses' attitudes/behaviours following an intervention aimed at incorporating the four intentional caring behaviours into their practice. Truth be told, duration of training, teaching strategies and some of the patients' demographic characteristics differed from ours, which might explain the result. These points of divergence justify the relevance of our pilot study, the aim of which was to evaluate the feasibility and acceptability of the proposed intervention. Consequently, this educational intervention, which was delivered to the participating HD nurses, seems just as relevant for the patients given that, as remarked by certain authors (Baldursdottir & Jonsdottir, 2002; Erci et al., 2003), any significant increase in nurses' caring attitudes/behaviours perceived by patients has positive effects on their health and QOL (Lee et al., 2008).

In view of the two-dimensional F5 and F6 of the PIIA-70 scale (Cossette et al., 2005), whose differences were not statistically significant between the pre and posttest, it is likely that the power of the study explains these results, which corresponds to one of the limits of the latter. Other hypotheses can be raised as the fact that the educational intervention program was mainly focused on strengthening the humanist values and not specifically on relational skills (F5) or problem solving techniques (F6), which may explain why these attitudes/behaviours were not mobilized primarily by the participating nurses. Another element may also be mentioned as a lack of repeated posttest measures of caring attitudes/behaviours of participating nurses, which is also a limitation of this study. Indeed, there might be a gradation in time in acquiring or reinforcing caring attitudes/behaviours after a recent educational intervention, which could be explored in a future

study. Finally, from patients' perspective receiving hemodialysis, no noticeable change were reported in regards to their nurses' ability to understand their emotions (F5) or to set realistic goals (F6).

Finally, one can notice that, similar to the nurses participating, patients undergoing hemodialysis also found significant changes in their nurses' caring attitudes/behaviours recently after the educational intervention. Presumably, their regular attendance at the dialysis center helped intertwine a close relationship with nurses so that they are very sensitive to changes in their attitudes and behaviours. It is likely that a repeated measures study design would highly contribute to better explain these results.

Regarding QOL, our results reflected moderate scores for all the dimensions of the WHOQOL-BREF. Similar results were reported in other studies (Ferreira & Da Silva Filho, 2011; Ginieri-Coccosis, Theofilou, Synodinou, Tomaras, & Soldatos, 2008; Sathvik, Parthasarathi, Narahari, & Gurudev, 2008; Theofilou, 2011; Yang, Kuo, Wang, Lin, & Su, 2005; Wasserfallen et al., 2004) that evaluated QOL of patients undergoing HD in various countries. What's more, when we compared the results of our study against those of Baumann, Erpelding, Regat, Collin, and Briançon (2010), obtained with a French-speaking healthy population, our patients undergoing HD seemed to enjoy a lower QOL. At the six-month measurement (T3), a significant deterioration in physical health among the patients in our study was observed. Certain authors (Ginieri-Coccosis et al., 2008) have specified that patients' QOL tends to decline over time and all the more so for persons who have been on hemodialysis for a long time, which was the case in our study. This finding can be explained by the fact that these patients are faced with multiple symptoms that can affect QOL (Danquah, Zimmerman, Diamond, Meininger, & Bergstrom, 2010; Davison & Jhangri, 2005; Weisbord et al., 2005), including fatigue or lack of energy, a common manifestation in this population (Caplin, Kumar, & Davenport, 2011). However, the other QOL domains (psychological health, social relationships and environment) were maintained over time among our participating patients. Perhaps the changes perceived by the patients in the participating nurses' caring attitudes/behaviours helped sustain these three dimensions of QOL. This fact lends credence to the idea that the caring relationship developed by nurses has a therapeutic effect in maintaining or improving certain QOL dimensions, as observed by Erci and colleagues (2003), in their study of a population of hypertension patients.

Limits

Our study presents certain limits. First, the degree of involvement and communication of care management at the establishment where we conducted the research might not reflect the reality of all the healthcare organizations of the Canton of Vaud and could have had an impact on the recruitment and participation of the nurses in our study. Second, the fact that the EILP-70 scale was used only at pretest (T0) and immediate posttest (T1) did not allow determining whether the reinforcement of nurses' caring attitudes/behaviours following the educational intervention persisted over time. It is imperative, therefore, that future research into the effectiveness of this educational intervention apply a repeated-measures design for both nurses and patients undergoing HD. Third, only frequency of caring attitudes/behaviours among participating nurses was examined. Instead, as suggested by Cossette (2006), other aspects should be explored, such as degree of competence in adopting these caring attitudes/behaviours or degree to which nurses deem it possible to adopt each of these caring attitudes/behaviours in clinical practice. Fourth, the fact that some of the relationships between variables that did not prove significant might be due to lack of power owing to a small sample size. Fifth, we used a generic instrument (WHOQOL-BREF) to measure QOL. However, according to Yang and colleagues (2005), this scale does not allow examining all aspects of the QOL of the ESRF population. Some researchers (Coelho et al., 2005; Valderrabano, Joffre, & Lopez-Gomez, 2001) have argued that any study of QOL in a population of people living with a chronic condition should include two QOL measures, one generic and the other, specific. This point will need to be pondered in future research on the effectiveness of such interventions, bearing in mind that the administration of two QOL measures might represent too much of a burden for these already frail individuals (Perneger, Leski, Chopard-Stoermann, & Martin, 2003). Finally, the research design used does not confirm that preliminary results are merely the educational intervention (Hawthorne effect). According to Fortin (2010), only a randomized control trial could limit this bias. Therefore, the generalizability of our findings is limited.

Conclusion

According to Anderson and Prentice (1999), pilot studies serve to gather key data to justify and plan random clinical trials. The results of our study provided tangible elements concerning the feasibility and acceptability of the proposed educational intervention, as well as its preliminary effects on the participating HD nurses and patients. Further research should be undertaken now to examine its effects on a larger population

of HD nurses and patients using a repeated-measures design. Several improvements will need to be made in terms of content taught and measures used. Indeed, it seems essential to include a clinical simulation situation in order to facilitate appropriation of the content taught and its application in clinical practice. In addition, measures of nurses' QOL at work and of their work environment will need to be considered in future studies. Finally, the use of a mixed design combining quantitative and qualitative methods allowed gaining a deeper understanding of the changes in nurses following the educational intervention. In fact, the preliminary results suggested that the educational intervention has allowed nurses to promote their holistic vision of their patients. Such new insight has contributed to change both their caring attitudes and behaviors within their practice. Consequently, future studies should adopt this approach in order to grasp the complexity of the phenomenon under study more thoroughly.

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