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## **Impact of Nurses' Solution-focused Communication on the Fluid Adherence of Adult Patients on Hemodialysis<sup>1</sup>**

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## ABSTRACT

**Aim:** To test the hypothesis that fluid adherence in patients on hemodialysis can be improved through nurses' solution-focused communication with patients on issues of adherence.

**Background:** Adherence to fluid-intake restrictions is low in patients on hemodialysis, creating serious health risks. Psychosocial interventions to increase adherence have typically focused on patients and ignored patient/staff interactions.

**Design:** This is a single-group, pre-post pilot study registered in [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03432988) (identifier: NCT03432988).

**Method:** A one-month baseline of inter-dialytic weight gain was taken in April 2016 for a group of 36 adult patients in a hospital hemodialysis unit. Then, the nurses of the unit received a 4-hour training in solution-focused communication on issues of fluid adherence and applied it with the patients of the sample. Inter-dialytic weight gains were measured during another month. Six months after the training, in October 2016, inter-dialytic weight gains were measured for another month.

**Results:** After introducing solution-focused communication on fluid adherence, patients' average inter-dialytic weight gains decreased significantly, below the level considered indicative of problematic adherence. These results were maintained at follow-up.

**Conclusions:** Our results suggest that a novel approach to adherence, nurses' solution-focused communication with patients on hemodialysis, may improve patients' adherence to fluid restriction. More rigorous, controlled studies are required to confirm long term benefits and to understand the causal mechanisms that may underlie the effectiveness of this intervention.

**WHY IS THIS STUDY NEEDED?**

- ▶ Adherence to fluid-intake restrictions is crucial for the health of patients on hemodialysis, but is usually low.
- ▶ Existing interventions to increase fluid-intake adherence tend to be of psychoeducational nature, focusing on patients' knowledge, behavior or mental health.
- ▶ There are few intervention studies that address nurse-patient interaction on fluid adherence in hemodialysis, and none that use solution-focused communication.

**KEYWORDS**

Fluid adherence; hemodialysis; intervention research; solution-focused therapy; nurses; nurse-patient communication; patient adherence

**AIM**

To test whether adherence to fluid restriction in patients on hemodialysis can be improved through nurses' solution-focused communication with patients.

## **BACKGROUND**

Hemodialysis is the most frequent technique of renal replacement therapy for patients with end stage kidney disease. Patients' adequate dietary behavior is a crucial factor in the prognosis of patients on hemodialysis. Fluid non-adherence, by inadequate eating and/or by excess fluid intake in between dialysis sessions, leads to more interdialytic weight gain (IDWG), that may in turn lead to medical complications and reduce patient survival (Baines & Jindall, 2011). However, fluid adherence is typically found to be poor (Kugler, Maeding, & Russell, 2011).

Psycho-educational programs have been widely used, and consistently produce positive albeit small effects on the main indexes of dietary adherence, that often do not persist in the medium or long term (Idier, Untas, Koleck, Chauveau, & Rasclé, 2011). The vast majority of these interventions are intrapersonally focused, neglecting the interaction between nurses and patients. This is unfortunate, as the professional-patient communication is one of the most important resources in health care. So far, only one study has focused on changing the ongoing, routine nurse-patient communication in hemodialysis wards (Russell et al., 2011). This study did not find any statistically significant effect of the intervention.

Solution-Focused Nursing (McAllister 2007) (SFN) is a language-based, collaborative practice that requires a shift of attention from a problem-dominated, deficit perspective to a focus on solutions and behavior change. SFN aims to empower patients by activating their resources through solution-focused dialogues. These dialogues focus on patients' successes and improvements, described in behavioral and interactional terms, and on how the patients could produce more of them. Solution-focused interventions have been applied successfully to

increase adherence in a number of health-related areas, and could be a promising alternative to promote adherence to fluid restriction in hemodialysis.

## **DESIGN**

This is a single-group, pre-post pilot study. The IDWG was the dependent variable, expressed as the weight gain in kilograms between dialysis sessions. A base-line was established by taking IDWG data for one month in April 2016; after the nurses' training, we took IDWG data for another month. Follow-up was carried out six months later, in October 2016.

## **METHODS**

### **Participants**

All 36 patients of the morning shift of a hemodialysis unit in a public hospital were invited to participate in the study. All accepted and gave written informed consent. Mean age of patients was 65.56 (SD=14.89) with an average tenure in hemodialysis of 54.09 months (SD= 55.08). 57.5% were men and 42.5% were women.

The three nurses in charge of the morning shift accepted to participate in the study. Nurses were two women (39 and 37 years old) and one man (30 years old). On average, they had been working 13.6 years as nurses in hemodialysis, and 9.3 years in the hemodialysis unit where the study was carried out.

### **The intervention**

*Training.* Two two-hour training modules were designed by two solution-focused therapy experts. In each module, participants watched videos that illustrated solution-focused

communication on fluid adherence and practiced the skills in role-plays. The second module was delivered two weeks after the first one.

*Solution-focused communication on IDWG.* In the case of IDWG improvement, nurses were trained to congratulate the patient and then to explore in detail, from a stance of curiosity, how s/he had accomplished the weight reduction. Nurses were trained to invite patients to share specific behavioral details and also to describe their own behavior from the perspective of significant family members. Nurses were also taught to compliment patients on their accomplishments and to invite them to keep track of anything else they might find useful to control fluid intake over the next days.

In the case of IDWG worsening, nurses were encouraged to validate patients' difficulties and empathize with their predicament. After that, they were to ask: "Taking into account how difficult this has been for you these days, how come your weight is not even worse?" This question was asked to identify useful strategies and to explore what it would take for patients to keep applying them.

During the time of the study, no procedural changes were introduced in the hemodialysis unit, and there were also no changes in medical protocols or hemodialysis equipment.

## **RESULTS**

A repeated measure analysis of variance (ANOVA) and Student's t test were used to analyze the changes in patient's IDWG over time.

Solution-focused communication had an impact on the average IDWG scores of the group of patients (Figure 1). ANOVA revealed that the pre-post differences were significant,  $F(1, 13) = 3.21, p = .017, \eta^2 = .85$ . There were no significant differences between the post-

treatment and the follow-up data,  $F(1, 13) = 2.30$ ,  $p = .06$ ,  $\eta^2 = .80$  indicating that the improvements persisted six months later.

#### HERE FIGURE 1

Analyzing the monthly averages, the difference between pre-training IDWG ( $M = 2.53$  kgs.,  $SD = 1.08$ ) and post-training IDWG ( $M = 2.23$  kgs.  $SD = .91$ ) was significant ( $t = 2.97$ ,  $p = .005$ ). As a result, the groups' average moved from a problematic IDWG ( $>2.5$  kgs.) to a non-problematic IDWG ( $< 2.5$  kgs.), that was kept at follow-up ( $t = .48$ ,  $p = .63$ ).

#### CONCLUSIONS

Our results suggest that modifying the way nurses communicate with patients on adherence issues can indeed produce stable changes in patients' behavior outside the dialysis session. This provides preliminary empirical support to a completely new way of promoting patient adherence in hemodialysis, focused on ongoing nurse-patient interactions. If these results are replicated in future controlled studies, they would have important implications. Hemodialysis nurses could learn to promote fluid-intake adherence by interacting with patients in a more collaborative and solution-focused way. Solution-focused communication is simple to teach and can be easily introduced in routine hemodialysis nursing; therefore, it would be a cost-efficient way to increase patient adherence in hemodialysis wards.

As to the limitations of this study, the sample is small and it is unknown to what extent the results can be generalized. Furthermore, a quasi-experimental design does not allow to make strong causal inferences.

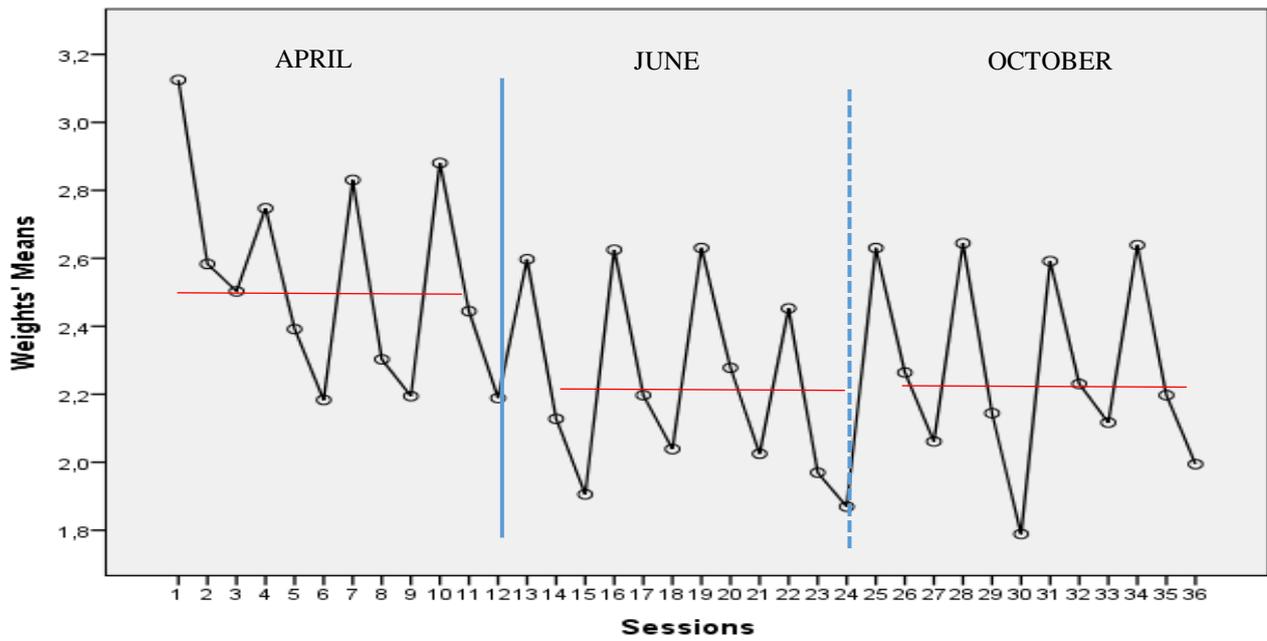
We see several promising lines for future research. A controlled, randomized study should be undertaken to rule out the effect of possible intervening variables. In that study, patient self-report adherence measures would help to get a clearer picture on how solution-

focused communication promotes fluid adherence. Qualitative research could provide further insight into the experiences of both patients and nurses. Another open question is whether nurses' solution-focused communication style and patients' IDWG changes hold in the longer term, an especially relevant issue in chronic conditions.

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Figure 1. Average IDWG for three months (year 2016).



Higher IDWG values represent poorer adherence with the fluid intake regime. The average IDWG for each of the three months is marked by the horizontal lines.