ANNA-KAISA PUSA The Right Nurse in the Right Place Nursing Productivity and Utilisation of the RAFAELA Patient Classification System in Nursing Management

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2.4.2. Presentation of the RAFAELA patient classification system (PCS)

The RAFAELA PCS has been actively studied in Finnish health care and is part of the electronic patient administration system. The development of RAFAELA PCS started in 1994, and it was named after the research group. The RAFAELA-system comprises three parts: the Oulu Patient Classification (OPC) system; the nurse resource registry; and the PAONCIL (Professional Assessment of Optimal Nursing Care Intensity level) measure (i.e. the **RAFAELA patient classification system = OPC+ Nursing resource+ PAONCIL**). **Using the OPC system and the nurse resource registry, it is possible to calculate the nursing care intensity points per nurse** during certain days. Using linear regression analysis, **the PAONCIL measure is used to estimate the optimal nursing care intensity level per nurse**, which in turn, describes the nurse resources needed in proportion to the need of patient care. (Fagerström & Rainio 1999, Oulun yliopistollinen keskussairaala 1994, Kaustinen 1995, Fagerström et al. 1998, Rainio 1994, Rainio 1999, Fagerström 2000, Fagerström et al. 2000a,b, Fagerström & Rauhala 2001, Fagerström & Rauhala 2003)

Data received through the RAFAELA patient classification system regarding the optimal nursing care intensity per nurse levels or rates on different wards enable the existence of one strategic target of nursing, one measure on what the situation regarding the productivity of nursing should be on an annual basis, taking into consideration the optimal levels of ensuring quality (see Vaasan sairaanhoitopiirin talous- ja toimintasuunnitelma 2007 - 2011 [Vaasa Hospital District Financial and Strategic Plan 2007-2011], Kaplan & Norton 2001a,b). The data gathered generates information, with the aim of converting this into knowledge, to be used in the management of the organisation (Harno et al. 2000), and thus improving productivity and enabling a more efficient allocation of resources (Lillrank et al. 2002). In

other words, through management, information becomes wisdom, and know-how, information, experience and understanding become the wisdom of management (Vuori 2005b:37).

2.4.3. The Oulu Patient Classification (OPC)

The OPC comprises six subsections of nursing care:

1) planning and co-ordination of care;

2) breathing, blood

circulation and symptoms of disease;

3) nutrition and medication;

4) personal hygiene and excretion;

5) activity, movement, sleep and rest;

6) teaching, guidance in care and follow-up care, emotional support.

In each of these areas, the nurse classifies the patient into one of **four classes according to his/her need of care (from A=1 point to D=4 points)** once a day. A 10-page classification manual is used in the classification. **The OPC summary score is calculated by adding up the points in the six care areas** of the system. Thus, the nursing care intensity of a patient can be scored between 6 and 24. **The higher the score, the higher the nursing care intensity of the patient**. The OPC measure describes how a nurse has responded to the patients' needs using the various processes and interventions of nursing work (Hoffman 1988, Rainio 1994, Rainio 1998, Kaustinen 1995).

2.4.4. Nursing resources

The number of nurses who have worked with the patients in a ward is registered every day in the nurse resource registry. The OPC score is divided by the number of nurses on the ward each day. The nursing care intensity points per nurse ratio describes the productivity of nursing care in the ward. (Rainio 1999, Fagerström & Rainio1999, Fagerström et al. 2000b)

2.4.5. The Professional Assessment of Nursing Care Intensity Level (PAONCIL)

The third part of the RAFAELA PCS is **PAONCIL. Nurses assess how they have experienced their shift's workload using a 7-class measure**: 0 is the optimal situation, 1-3 is a situation in which nurses have too much work, and the greater the figure, the more nurses have to prioritize tasks. A score of between –3 and –1 describes a situation in which nurses feel that they have time for less important tasks; the closer to –3 the score, the more nurses feel they have time for such tasks. Classification guidelines have been developed for each of the whole numbers in the scale. The material includes an estimate of several hundred shifts, depending on the ward size and number of nurses.

Using regression analysis, it is possible to analyze how nursing care intensity explains the workload experienced by the nurses (PAONCIL score). Optimal nursing intensity is produced by simple linear regression analysis. The **linear association between** the values of the **OPC** (daily nursing care intensity points per nurse) and the **PAONCIL** (daily mean) instruments can be **quantified as follows**: what value does the OPC give when the average PAONCIL for the same day is optimal (i.e. zero), and how strong is the association (i.e. the explanatory power) between the OPC and PAONCIL? The explanatory power - or the determination coefficient (R2) - determines by how many percent the variation in values of the OPC explains the variation in values of the PAONCIL. This can, in principle, vary between 0% and 100%. Following an administrative decision, the measurements per ward were used so that when the nursing care intensity points per nurse were 27, for example, the optimal nursing care intensity level in the ward could vary +/- 3.5 points, indicating that the optimal range would be between 23.5 – 30.5 nursing care intensity points per nurse per day. There will always be variation between days in terms of nursing care intensity points per nurse, and how much variation is acceptable is decided democratically by nursing managers. The decision is based on practical management, since no scientific method by researchers has been found to do that. This nursing work assessment method was developed in Vaasa Central Hospital. Weighting coefficients were used at the beginning of the development work to place patients into different categories of nursing care intensity. At present, nursing care intensity points without coefficients are in use. (Rainio 1996, Rainio 1999, Fagerström et al.1999, Fagerström et al.

2000b) In the RAFAELA system, each ward has its own optimal level of nursing care, which is estimated using the PAONCIL measure. This indicates a situation in which nurses assess that they have given the patients good quality care. Moreover, the significance of factors other than nursing care intensity for the workload experienced by nurses have been studied. Such other factors include, for example, conflicts in collaboration between employees. (Fagerström & Rainio 1999, Rainio 1999, Fagerström et al. 2000b).

Details of the first development stage of the PAONCIL method are presented in Articles 2 and 3. Nurses perform many tasks at the same time, and these activities cannot be measured with engineered time and motion studies; the timing of individual tasks does not adequately measure professional nursing care. Rougher measurements are more suited to the multidimensional nature of nursing. (Flarey 1990:43) The significance of assessing the sufficiency of nursing staff by nurses in patient care should not be underestimated (De Groot 1989a:33). The PAONCIL method is based on the assessment of nursing staff evaluations, and the utilisation of these with sufficiently wide statistical data.