Improving the process of pain management in residents with dementia: a tailored implementation strategy.

Name:	E.G.C. Siegerink
Student number:	3932400
Course:	Master Thesis
Master:	Clinical Health Sciences – Nursing sciences
University:	University of Utrecht
Supervisor.	R.H. van Linge RN, PhD

Status:	Concept
Date:	July 2015
Reference style:	Vancouver
Intended journal:	International journal of older people Nursing
Words:	3.734
Words Abstract:	292

Abstract

Background: In nursing home residents prevelances of pain rates up to 80%. However, pain of residents with dementia is often unrecognized and undertreated. Improving pain management is a relevant goal for elderly care organizations. To reach this, implementation of Verenso's multidisciplinary 'Recognition and treatment of chronic pain in vulnerable elderly people' guideline is a critical step.

Aim: To develop a tailored implementation strategy for Verenso's multidisciplinary guideline to improve the pain management for residents with dementia living in a nursing home and further development of the multi-level fit implementation diagnostics of the innovation-contingency model.

Methods: A mixed method design with two phases was conducted. The study population included all health-care professionals from a psychogeriatric ward in a nursing home. In phase I, the implementation diagnostics were assessed with the multi-level fit diagnostics of the innovation-contingency model and the current process of pain management was identified. Based on the data of Phase I and the decision rules of the innovation-contingency model a tailored implementation strategy was developed in phase II.

Results: The implementation diagnostics indicate that a configuration development strategy will be the most appropriate strategy to implement the guideline. This strategy was found to be practically feasibly by members of the organization which the strategy has been tailored to.

Conclusion: This study shows that adding a qualitative method to the multi-level fit diagnostics of the innovation-contingency model provide a detailed insight in implementation diagnostics. This way, a tailored implementation strategy for Verenso's multidisciplinary guideline can be developed and tailored to the context.

Recommendations: A longitudinal study to determine the effectiveness of the configuration development strategy and further research to determine the effectiveness of adding a qualitative method to the innovation-contingency model are recommended.

Key words: Implementation, Pain management, Quality improvement, Dementia

Introduction

The number of people with dementia in the Netherlands may exceed to 500.000 in 2040 (1). In 2013 around 82.000 people with dementia lived in Dutch nursing homes (2). In nursing home residents prevelances of pain rates up to 80% (3). Pain has a serious impact on the quality of life and functional impairment of people with dementia (3). Despite a high prevalence of pain among nursing home residents, pain of residents with dementia is often unrecognized and undertreated (4,5).

There are many reasons for this unrecognized and undertreated pain. First, assessing pain in dementia is extremely difficult, especially in the advanced stage of dementia (6-9). In daily care the use of pain assessment tools is low and in some cases non-existing(10,11). Second, in the process of pain management health-care professionals (HCP's) with different roles are involved. The communication about pain in residents with dementia among those HCP's is often poor (12). Third, some of them hold inaccurate beliefs about pain and the staff's knowledge about it is insufficient (11).

A critical step in improving pain management is the use of evidence based pain assessment tools, a multidisciplinary goal on pain management and better education on specific aspects of pain in dementia (6,7,11,13,14). Recommendations include national guidelines (11,12). In 2011, Verenso developed a Dutch multidisciplinary guideline 'Recognition and treatment of chronic pain in vulnerable elderly people'. This guideline is based on evidence gained about pain assessment and management (15). However, the implementation of guidelines in general is often done fragmentedly and inconsistently (16).

In order to implement guidelines, a tailored implementation strategy based on a theoretical framework has been proven to be promising (11,17). One of the frameworks is the innovation-contingency model (IC-model) (18). According to the IC-model, implementation diagnostics of all parts of the involved system are necessary to develop an appropriate tailored implementation strategy. In this method, characteristics of the involved system are diagnosed in terms of fit with the innovation. The fit between the organization, the innovation and the implementation forms the basis of the IC-model. A fit or misfit between team configuration and innovation configuration is a coherent total of different characteristics of a system, a configuration (18). The literature suggests that information, that is needed for innovation, is processed in nursing teams through learning activities (19,20). Recently, a

study of Koekoek showed the importance of including the phase of learning in the team and organization additional to the fit diagnostics (21). Therefore, the team learning and organization learning are included in the fit-diagnostic of the IC-model. According to the IC-model individual characteristics are also known to be able to predict implementation success (18). Because behavior of individuals can be predicted by the perceived primary attributes of the innovation (19), the Innovation Attitude will be included in the diagnostics in this study (20). A fit between all those characteristics will predicts implementation success. These refined multi-level fit diagnostics of the IC model will be used in this study (22,23). See figure 1.

<Insert Figure 1>

Improving pain management in residents with dementia is a relevant goal for elderly care organizations. To reach this, implementation of Verenso's multidisciplinary 'Recognition and treatment of chronic pain in vulnerable elderly people' guideline is a critical step. However, elderly care organizations are still struggling with the implementation. Therefore, a tailored implementation strategy has to be developed. The aim of this study is twofold. First, to develop a tailored implementation strategy for Verenso's multidisciplinary guideline 'Recognition and treatment of chronic pain in vulnerable elderly people' to improve the pain management for residents with dementia living in a nursing home. This was done by the use of quantitative and qualitative implementation diagnostics. Second, further development of the multi-level fit implementation diagnostics of the IC model. To reach this, the following research questions will be answered:

1. To what extend is there a fit between configuration of the team and innovation, the innovation attitude, the phase of learning in the team and the learning capability of the organization?
2. What is the status of the current pain management in residents with dementia in a nursing home?
3. What tailored implementation strategy, based on implementation diagnostics, for the multidisciplinary guideline 'Recognition and treatment of chronic pain in vulnerable elderly people' to improve the pain management in residents with dementia in a nursing home is needed?
4. What is the perceived feasibility of the tailored implementation strategy?

Method

Design

The study design was according by the principles of a convergent parallel mixed method design (Figure 2) (24).

<Insert Figure 2>

The study was conducted in two phases in the period January 2015 – June 2015 in a psychogeriatric ward in a nursing home. Phase I consisted of the diagnostic phase to develop the tailored implementation strategy. In this phase quantitative and qualitative data were collected on the same time. The researcher analyzed the data separately. Those analyses were merged to barriers and facilitators for implementing the guideline. Based on this overall interpretation and the decision rules of the IC model a tailored implementation strategy was developed in Phase II. Finally, the perceived feasibility of the implementation strategy was discussed in a focus group.

Population and setting

The study population consist of all HCP's from a psychogeriatric ward in a nursing home in the Netherlands. The psychogeriatric ward provides 24 hours care to approximately 46 residents with dementia. HCP's with different functions were invited to participate in the study, because different professions have an important role in the process of pain management and implementation (12). A purposeful sampling was used to achieve variation in profession (25). To be included HCP's have to be involved in the process of pain management or implementation and have to work more than two months on the ward. Students and flex workers were excluded. For each part of data collection participant were purposely selected based on specific experience or perspective, table 1.

<Insert Table 1>

Data collection

The demographic characteristics age, gender, occupation/employment of the ward, degree of education and years of experiences has been collected for all participants.

Phase I - Diagnostic

The multi-level fit diagnostics for the configuration of the team and innovation, the innovation attitude, the phase of learning in the team and learning capability of the organization were assessed by the use of Dutch questionnaires (table 2). The innovation attitude was assessed with the Perceived Innovation Attitude Questionnaire. The outcomes were divided in five subscales: relative advantage, operational compatibility, complexity, observability and trial ability On those subscales, the score can be low (μ 1.00-2.33), middle (μ2.34-3.66) or high (μ3.67-5.00) (19,26). The configuration of the innovation and the configuration of the ward were assessed by the questionnaire Perceived Innovation Characteristics (WIK) and Perceived Ward Characteristics (WAK). The outcomes were divided in four configurations: rule, result, team and development oriented. If the mean on all layers of each configuration is >4 there is an internal fit. If the WIK and WAK identify a fit on the same configurations, there is an external fit (27). The level of learning in the team was assessed by the Team Learning Questionnaire. The outcomes were divided in three scores: fragmented learning (μ16-68), shared learning (μ69-80) and synergetic learning (μ80-112) (28). The learning capability of the organization was assessed by the Organization Learning Capability Questionnaire. The outcomes were divided in four subscales: managerial commitment, systems perspective, openness and experimentation and knowledge transfer and integration. On those subscales, the score can be low (μ 1.00-2.33), middle (μ2.34-3.66) or high (μ3.67-5.00) (21,29).

<Insert Table 2>

To identify the status of the current pain management practices qualitative data were used. Semi-structured interviews with broader and specific questions about the current status of pain management were conducted by the researcher. All participants were interviewed once in a privacy room. A broader question was used to make it possible for participants to talk about pain management in their own words (30). The broad initial question was *"Can you tell me about the current pain management on this psychogeriatric ward?"* To clarify aspect of pain assessment and treatment that emerged as meaningful, specific questions were asked, such as *"How do you perform pain assessment by residents with dementia?"* and *"Which interventions are used to treat pain?"* All interviews were recorded and transcribed by the researcher.

Phase II – Implementation strategy

Based on the overall interpretation of phase I and the decision rules of the IC-model a tailored implementation strategy was developed by the investigator and supervised by an expert of the IC-model (18). The implementation configuration strategies are presented in table 2. To evaluate the perceived feasibility of the tailored implementation strategy a focus group was performed. The results of phase I and the tailored implementation strategy were presented and discussed with an active method (31). The feasibility was discussed by three topics of feasibility: acceptation/integration, implementation/practicality and demand (32). An independent moderator has introduced those topic. The focus was recorded and transcribed by the researcher.

<Insert Table 3>

The main outcomes

The main outcomes of this study were the multi-level fit diagnostics, current status of pain management, the tailored implementation strategy and the feasibility of the strategy.

Data analysis

The demographic data of the respondents were described separately and presented in table 4.

Phase I - Diagnostic

The researcher analyzed the questionnaires quantitatively and the interviews qualitatively. The data of the questionnaires were analyzed with SPSS software version 22 (33). The missing values were imputed with the mean score of the participants to provide complete cases analysis. Each questionnaire was analyzed with frequencies, percentages, mean score and standard deviation. The multi-level fit diagnostic was determined with interpretation of the mean and drawn in profiles (18).

The interviews were recorded, transcribed and anonymized. Data analyzing and ordering have been conducted by the use of Nvivo software version 10. The data have been coded and categorized of themes by using open and axial coding (31). All participants were labelled by a number, because each discipline have different roles in pain management (12). The interviews were analyzed by the investigator and peer reviewed through an independent

researcher. The Dutch quotes and themes of the interviews were translated to English by the researcher and supervised by an expert. To ensure trustworthiness a logbook of the process of analysis was kept (30,31,34). Finally, the two sets of results were merged to barriers and facilitators for implementing the guideline. Those were clustered in themes and described in an overall interpretation.

Phase II – Development

The data analysis of the focus group was similar to the analysis of the interviews in phase I. To ensure trustworthiness, the summary of the focus group was checked by the participants and data were analyzed by the investigator and an independent researcher (31).

Procedure

In a team meeting the researcher gave verbal and written information about the study's purposes and processes. Information included the voluntary nature of the study, the anonymity guaranteed in relation to any data and information about the multidisciplinary guideline. Following the introduction all the HCP's were asked to fill in the questionnaires, to reduce non response. HCP's, who were unable to be present at the team meeting, have been informed by email and colleagues asked them to fill in the questionnaires. The researcher personally asked all disciplines, who were involved in the process of pain management, to participated in the interviews and the focus group. Those who agreed to participate received an official invitation with information about the study by email.

Ethical issues

The study was conducted according to the principles of the Declaration of Helsinki (35). WMO guidelines of ethical approval were not applicable, because the data were non-experimental and consisted of questionnaires, interviews and focus groups with non-patient participant (35). Written consent was asked by the region manager of the organization. Participants were allowed to withdraw from the study at any time without reasons. After detailed information about the study participants gave written and verbal consent. The data were de-identified and kept on a computer with personal login.

Results

Phase I - Diagnostic

A total of 59 HCP's was approached to fill in the questionnaires of the multi-level fit diagnostics. At the end of phase I, 43 HCP's filled in the questionnaires. Four participants were excluded for described criteria. 39 HCP's (66%) were included in this study. The characteristics are presented in table 4. The scores of the Innovation attitude questionnaire are middle to high. The scores of complexity (μ 2.8), trial ability (μ 3.6) and operational compatibility (μ 3.5) are middle, which means the guideline is reasonably difficult to use and there are insufficient opportunities to try out the guideline in daily practices. In the opinion of ninety percent of the respondents, the guideline asks a lot of coordination and cooperation. The scores of relative advantage (μ 4.0) and observability (μ 4.0) are high. This means that in the opinion of the respondents the guideline fits to the personal and organizational goals and it will improve the quality of care. A multiple team- and development-oriented internal fit for the ward characteristics is determined. Consequently the respondents perceive the ward as flexible and it is internal- and external-oriented. For the innovation characteristics, a single team-oriented internal fit is determined, which means the respondents perceive the guideline as team-oriented. Therefore, an external fit on the team-oriented configuration was present between the ward and innovation characteristics. Thus the ward and the innovation are perceived as team oriented. The score of the team-learning questionnaire was synergetic (μ 9.45). The team jointly constructs shared meanings, assumptions, and language which lead to consensually developed solutions, positions, and recommendations. The scores of the organization learning questionnaire were high on all subscales. Management recognize the relevance of learning and the organization has a culture that promotes the acquisition, creation, and transfer of knowledge as fundamental values. The scores of the multilevel fit are shown in table 5.

<Insert Table 4 >

<Insert Table 5>

At the end of phase I, a total of 7 HCP's was interviewed (table 4). The interviews lasted from 14 to 28 minutes. Three themes are developed describing the current status of pain management on the psychogeriatric ward: the need of skills to recognize pain in resident with dementia, treating pain in residents with dementia and the process of pain management of the psychogeriatric ward. The themes are presented in figure 3 and illustrated by quotes in the text. Pain assessment in residents of dementia is perceived as complex and demands attention of all discipline. According to one of the HCP, *"My colleagues and I do not always*

realize that pain can be the cause of misinterpreted behavior". The following skills to recognize pain are needed skills to report, to observer behavior, to use appropriate pain assessment instruments, have knowledge about pain in residents with dementia and knowing the resident. Pharmacological, comfort and psychosocial interventions are used by disciplines to treat pain in residents with dementia. Sufficient knowledge about the interventions is indicated as improvement. According to one of the HCP's: "O*pportunities for improvement is that every discipline knows the interventions which are available and the effect of them".* In the process of pain management, the daily processes of pain management and the tasks and responsibilities are unclear. Shared values and a common goal on pain in residents with dementia are missing. In practices, the multidisciplinary cooperation and communication are perceived differently. According to one of the HCP's: *"Communication within the disciplines is pleasant and fast. We understand each other easily".* According to another HCP: "*I think communication within other disciplines is not as good as it should be". For example the feedback after an intervention is poor".* A multidisciplinary consultation and a multidisciplinary workgroup pain are existing.

<Insert Figure 3>

The quantitative and qualitative data were merged to barriers and facilitators and clustered into themes: motivation, multidisciplinary cooperation, structure and processes, skills and knowledge. See table 6.

<Insert Table 6>

Phase II – Development

An external fit on the team-oriented configuration is present between the ward and innovation characteristics. According to the interviews multidisciplinary cooperation and communication is perceived divergently. Therefore, the mono disciplinary team oriented configuration has to be developed into a multidisciplinary team oriented configuration. A configuration (multidisciplinary team) development strategy (CDS) has been chosen as an appropriate implementation strategy to implement Verenso's multidisciplinary guideline, based on the overall interpretation, motivational, cultural, structural and educational interventions are determined (table 7).

<Insert Table 7>

The feasibility of CDS was discussed with five members of the organization in a focus group of 90 minutes (table 4). The results of the implementation diagnostics have been recognized by the participants. All participants have recognize the insufficient cooperation and communication within the multidisciplinary teams. Also, the findings that the skills and knowledge about assessing and treating pain have to be developed, have been confirmed by all participants. The findings that the process of multidisciplinary cooperation is unclear, have been raised by some participants. They indicated that agreements about this process have been described clearly, but in practices it is still unclear for some HCP's. Finally, all participants agreed that the structures and processes in pain management are unclear. Then the feasibility of the CDS was discussed with the three topics. Participants indicate that the strategy fits the organization. *"The strategy suits the goals and vison of this organization".* The complexity of this strategy was discussed, in particular the cultural interventions to improve the multidisciplinary cooperation. Participants indicated this strategy as too extensive for their organization. According to one of the HCP*, I would like to have a more compact implementation strategy".* A timetable and a clear framework have to be added to the strategy. All participants stress the preconditions (e.g., time, budget, appropriate process manager) that should be determined early in the process. However, the intention to use the CDS is present by all participants. According to one of the participants "*It is very important that this strategy will be carried out".*

Discussion

In this study, the quantitative and qualitative implementation diagnostics indicate that for this psychogeriatric ward Verenso's multidisciplinary guideline should be implemented by the use of a CDS. The CDS should include motivational, cultural, structural and educational interventions. The CDS were found to be practically feasible by members of the organization which the strategy has been tailored to.

In this study, the development of a mono-disciplinary team-oriented configuration to a multidisciplinary team-oriented configuration was the main thread of the CDS. A study of Swafford et al. (2009) also indicated collaborating at a high level within the multidisciplinary teams is an important condition to improve pain management (12). Members of the organization recognized the insufficient cooperation and communication within the multidisciplinary teams. However, they also perceived the CDS as a complex strategy, in particular the cultural interventions to improve the multidisciplinary cooperation. Possibly, the

members do not recognize the improvement of multidisciplinary cooperation as a culture change. Consistent with that, Allen et al. (2013) suggest that well-developed communication within multidisciplinary teams provides better service and quality of care for elderly people (36). Improving the multidisciplinary communication may not only improve the pain management, but also other aspects of care. This information can be used to convince management of the importance of this CDS. The importance of identifying the current status of pain management in implementation diagnostics was showed in this study. Consistent with that, Grol et al. (2001) also showed the importance of identify the status of the current process of care to improve the quality of care (37).

A strength of this study was the use of a theoretical framework to implement Verenso's multidisciplinary guideline. A theoretical framework describes all elements that are important for a successful implementation. Another strength of this study was the intern validity. First, a qualitative method was added to the multi-level fit diagnostics of the IC-model. Based on the multi-level fit diagnostics an in-house-team-oriented strategy had to be chosen. According to the interviews multidisciplinary cooperation and communication should be further developed. Therefore, a CDS was chosen as an appropriate implementation strategy. Second, HCP's with a wide range of experience participated in the diagnostic phase. A clear view of how pain is assessed and treated on the psychogeriatric ward was provided. However, the intern validity is also a limitation. First, a purposive sample size was used to included HCP's for each questionnaire of the multi-level fit diagnostics. Therefore, for three questionnaires the sample size was small. Second, HCP's perceived the questionnaires difficult in terms, words and understanding. Another limitation of the study is the external validity. The implementation was tailored to one psychogeriatric ward of a nursing home and can not be transferred to another ward or organization. However, the external validity is also a strength. When the implementation diagnostics is the same as in this study, the strategy could be transferred to another ward.

Adding a qualitative method to the multi-level fit diagnostic of the IC-model gives a more complete insight and seems to be effective for tailoring. To determine its effectiveness should be assessed in an effect study. Simplifying the questionnaires of the multi-level fit diagnostics by research is also recommended.
Concerning the care practice, a clear framework and timetable should be added to the CDS. The management should be convinced about the importance of this CDS, including cultural interventions, before they take decisions about preconditions.

A longitudinal study is recommended to determine the effectiveness of the CDS. This can be done by implementing Verenso's multidisciplinary guideline with the use of the CDS and re-assessing multi-level fit diagnostics periodically.
Recently a study of Morris et al. (2011) shows that it still takes an average of 17 years for a nursing innovation reaches the clinical practice (38). A study of Verhagen et al. (2014) acknowledge that in order to truly affect the quality of care more research should be done on translating innovations into practice (39). This study is an example of connection nursing innovations and implementation theory with the current elderly care practice. Finally, more attention should be paid to the cooperation between elderly care practice and science.

Conclusion

This study shows that adding a qualitative method to the multi-level fit diagnostics of the IC-model provide a detailed insight in implementation diagnostics. This way, a tailored implementation strategy for Verenso's multidisciplinary guideline can be developed and tailored to the context. In this study, based on the multi-level fit diagnostics and qualitative implementation diagnostics a practically feasible CDS has been developed to implement Verenso's multidisciplinary guideline on the psychogeriatric ward.

References

(1) Alzheimer Nederland. Wereld Alzheimer Dag Rapport 2011. 2011.

(2) Poos MJJC MS. Hoe vaak komt dementie voor en hoeveel mensen sterven eraan? 2014; Available at: http://www.nationaalkompas.nl/gezondheid-en-ziekte/ziekten-en-aandoeningen/psychische-stoornissen/dementie/omvang/. Accessed 2012, June 24, 2013.

(3) Ferrell BA. Pain evaluation and management in the nursing home. Ann Intern Med 1995;123(9):681-7.

(4) Achterberg W, Pot A, Scherder E, Ribbe M. Pain in the nursing home: assessment and treatment on different types of care wards. J Pain Symptom Manage 2007;34(5):480-7.

(5) Scherder EJ, Bouma A. Is decreased use of analgesics in Alzheimer disease due to a change in the affective component of pain? Alzheimer Dis Assoc Disord 1997;11(3):171-4.

(6) Barry H, Parsons C, Peter Passmore A, Hughes C. An exploration of nursing home managers' knowledge of and attitudes towards the management of pain in residents with dementia. Int J Geriatr Psychiatry 2012;27(12):1258-66.

(7) Cohen Mansfield J, Creedon M. Nursing staff members' perceptions of pain indicators in persons with severe dementia. Clin J Pain 2002;18(1):64-73.

(8) Weissman DE, Matson S. Pain assessment and management in the long-term care setting. Theor Med Bioeth 1999;20(1):31-43.

(9) Zwakhalen SMG, Hamers JPH, Peijnenburg RHA, Berger MPF. Nursing staff knowledge and beliefs about pain in elderly nursing home residents with dementia. Pain research & management 2007;12(3):177-84.

(10) Herr K. Pain assessment in cognitively impaired older adults. Am J Nurs 2002;102(12):65-7.

(11) Achterberg W, Pieper MJC, van Dalen-Kok AH, de Waal, Margot W M, Husebo B, Lautenbacher S, et al. Pain management in patients with dementia. Clinical interventions in aging 2013;8:1471-82.

(12) Swafford K, Miller L, Tsai P, Herr K, Ersek M. Improving the process of pain care in nursing homes: a literature synthesis. J Am Geriatr Soc 2009;57(6):1080-7.

(13) Ersek M, Jablonski A. A mixed-methods approach to investigating the adoption of evidence-based pain practices in nursing homes. J Gerontol Nurs 2014;40(7):52-60.

(14) Herr K. Pain in the older adult: an imperative across all health care settings. Pain management nursing 2010;11(2 Suppl):S1-10.

(15) Achterberg W, de Ruiter C, de Weerd-Spaetgens, Chantal M E E, Geels P, Horikx A, Verduijn M. [Multidisciplinary guideline 'Recognition and treatment of chronic pain in vulnerable elderly people']. Ned Tijdschr Geneeskd 2012;155(35):A4606.

(16) Ploeg J, Davies B, Edwards N, Gifford W, Miller P. Factors influencing best-practice guideline implementation: lessons learned from administrators, nursing staff, and project leaders. Worldviews on evidence-based nursing 2007;4(4):210-9.

(17) Grol R, Cluzeau FA, Burgers JS. Clinical practice guidelines: towards better quality guidelines and increased international collaboration. Br J Cancer 2003;89 Suppl 1:S4-8.

(18) Van Linge R. Regels voor opstellen scorepatronen. Profielen en interpretatie van de vragenlijsten. 2014.

(19) Moore GB, I. Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. The Institute of Management Sciences 1991.

(20) Rogers E. The diffusion of innovation. 3rd ed. New York: Free Press; 1983.

(21) Koekkoek R. Team and Organizational Learning and Implementation success. 2011. Unpublished

(22) Linge van R. Innovation in Health Care: Theory, Practice and Research (Dutch). Maarssen: Elsevier gezondheidszorg; 2006.

(23) Douw G. Implementatie-effectiviteit van veilig incident melden. 2009. Unpublished.

(24) Creswell, J., Plano Clark, V. Designing and Conducting Mixed Methods Research. Second edition ed.: SAGE Publications, Inc; 2011.

(25) Portney L, G., Watkins M, P. Foundations of Clinical Research. Applications to Practice. 3rd ed. New Jersey: Pearson Education Interantional; 2009.

(26) Buwalda I. Adoptie van functie differentiatie. Onderzoek naar de invloed van organisatiecultuur, persoonlijke waarden en innovatiekenmerken op de adoptie van een innovatie. 2006

(27) Berkom PFJ, van. *Verpleegkundigen als inspiratiebron. 2009.* Unpublished

(28) Dechant K, Marsick VJ, Kasl E. Towards a model of team learning. 1993 (Studies in Continuing Education 15 (1)):1-14.

(29) Jerez-Gómez P, Céspedes-Lorente J, Valle-Cabrera R. Organizational learning capability: a proposal of measurement. Journal of Business Research 2005 6;58(6):715-725.

(30) Boeije H. Analysis in Qualitative Research. 1st ed. Londen: SAGE Publications; 2010.

(31) Holloway I, Wheeler S. Qualitative Research in Nursing and Healthcare. 3rd ed. Oxford: Blackwell Publishing; 2010.

(32) Bowen D, Kreuter M, Spring B, Cofta Woerpel L, Linnan L, Weiner D, et al. How we design feasibility studies. Am J Prev Med 2009;36(5):452-7.

(33) Vocht A, De. Basishandboek SPSS 18. 1st ed. Utrecht: Bijleveld Press; 2010.

(34) Campbell J, L., Quincy C, Osserman C, Pedersen O. Coding in-depth semistructured interviews: problems of unitization and intercoder reliability and agreement 2013(Sociological Methods & Research 42(3)):294-320.

(35) WMA Declaration of Helsinki. Ethical Principles for Medical Research Involving Human Subjects. 2014; Available at: http://www.wma.net/en/30publications/10policies/b3/, 2014.

(36) Allen J, Ottmann G, Roberts G. Multi-professional communication for older people in transitional care: a review of the literature. Int J Older People Nurs 2013;8(4):253-69.

(37) Grol R, Wensing M. Implementatie. Effectieve verbetering van de patiëntenzorg. 5th ed. Amsterdam: Reed Business Education; 2013.

(38) Morris Z, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. J R Soc Med 2011;104(12):510-20.

(39) Verhagen E, Voogt N, Bruinsma A, Finch C. A knowledge transfer scheme to bridge the gap between science and practice: an integration of existing research frameworks into a tool for practice. Br J Sports Med 2014; 48: 698-701

Tables and Figures

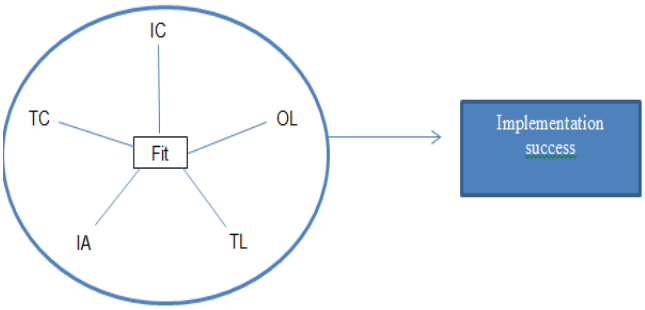

Figure 1. *Multi-level diagnostic: the fit between Team Configuration (TC), Innovation Configuration (IC), Team Learning (TL), Organization Learning (OL) and Innovation Attitude (IC) influence on Implementation Success* ***(22,23).***

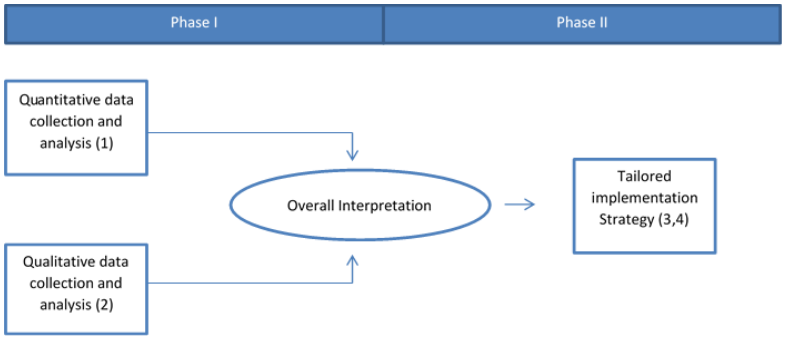

Figure 2. *Study design* ***(24).***

Skills and attitude to recognize pain	- Attention for pain - Skills to report pain - Skills to observer behavior - Use of pain assessment tools - Knowledge about pain in residents with dementia - Knowing the residents
Treating pain	- Pharmacological interventions - Comfort interventions - Psychosocial interventions - Sufficient knowledge about interventions
Process of pain management	- Daily process - Tasks and responsibilities - Multidisciplinary communication

Figure 3. *Current process of pain management*

Table 1.

Sampling and sample sizes

Data collection		**Sample**	**Number of participants**
Innovation Attitude	Questionnaire	HCP involved in the process of pain management	56
Configuration of the innovation	Questionnaire	HCP with different functions involved in the process of pain management and appropriate knowledge of the guideline	5
Configuration of the ward	Questionnaire	HCP of the nursing team involved in the process of pain management with variation in years of work experiences	9
Team learning	Questionnaire	HCP of the nursing teams involved in the process of pain management	52
Organization learning	Questionnaire	HCP who have appropriate knowledge of organizational learning.	4
Current status pain management	Interview	HCP with different functions involved in the process of pain management	7
Feasibility of the strategy	Focus group	HCP with different functions involved in the process of pain management	8

Table 2

Summary questionnaires multi-level fit diagnostic

Questionnaire	**Cronbach's Alpha**	**Likert scale**	**Number of items**	**Interpretation mean**
Innovation attitude (19,26)	.76 - .87	5-points	21	Low (1.00-2.33), middle (2.34-3.66), high (3.67-5.00)
Innovation configuration (27)	.76 - .91	5-points	12	> 4 on all layers indicates a fit
Team Configuration (27)	.70 - .75	5- points	12	> 4 on all layers indicates a fit
Team learning (39)	.94	7- points	16	Fragmented (16-68), pooled (69-80), synergistic (80-112)
Organizational learning (21,29)	.80	7- points	16	Low (1.00 – 2.33), middle (2.34 – 3.66), high (3.67 – 5.00)

Table 3

Summary of the implementation strategies (22)

Strategy	**Description**
In house	Consolidate a single strong configuration
Transformation	To replace an existing strong configuration through another
Adaption	To build on present basic concepts
Evolution	Strengthen of a number of embryonic configurations
Development	Further devolving of an embryonic configurations
Paradox	To maintain a hybrid situations
Attractor	To apply unusual interventions

Table 4

Characteristics participants multilevel fit diagnostics, interview and focus group

Characteristics	Questionnaires	Interviews	Focus group
Total			
N (%)	39 (66%)	7	5
Gender N (%)			
Female	38 (97.4)	5 (71.4)	5 (100.0)
Educational level N (%)			
Ive**	30 (76.9)	1 (14.3)	2 (40.0)
Bachelor degree	8 (20.5)	4 (57.1)	2 (40.0)
Master degree	1 (2.6)	2 (28.6)	1 (20.0)
Function N (%)			
Nursing team	33 (84.6)	2 (28.6)	2 (40.0)
Psychologist	1 (2.6)	1 (14.3)	
Physiotherapist	1 (2.6)	1 (14.3)	1 (20.0)
Occupational therapist	1 (2.6)	1(14.3)	
Management, policy workers	3 (7.7)	1 (14.3)	1 (20.0)
Arts		1 (14.3)	1 (20.0)
Age in years			
Mean (SD)	39.6 (11.1)	45.4 (10.1)	51 (2.6)
Work experiences			
In elderly care			
Mean (SD)	16.0 (11.0)	17.6 (11.0)	24.3 (8.1)
In organization			
Mean (SD)	12.0 (9.6)	10.9 (9.8)	15.3 (10.8)

Note: * Mean (standard deviation), ** Intermediate vocational education

Table 5

Results multilevel fit diagnostics

Questionnaire	Mean (sd) *	Subscale	Frequency (respons rate)
Innovation Attitude			37 (66%)
Complexity	2.8 (0.4)	Middle	
Trial ability	3.6 (0.7)	Middle	
Operational compatibility	3.5 (0.5)	Middle	
Relative advantage	4.0 (0.6)	High	
Observability	4.0 (0.5)	High	
Configuration of the innovation			3 (60%)
Rules-oriented	2.3 (1.5)* 4.0 (1.0)** 4.3 (0.6)***	No internal fit	
Result-oriented	3.0 (1.0)* 4.0 (1.7)** 4.0 (0.0)***	No internal fit	
Team-oriented	4.3 (0.6)* 4.7 (0.6)** 4.3 (0.6)***	External fit	
Development-oriented	3.0 (1.0)* 4.7 (0.6)** 4.0 (1.0)***	No internal fit	
Configuration of the ward			6 (86%)
Rules-oriented	3.7 (1.2)* 4.0 (0.9)** 4.1 (0.8)***	No internal fit	
Result-oriented	3.3 (0.8)* 3.8 (0.9)** 4.3 (0.8)***	No internal fit	
Team-oriented	4.3 (0.5)* 4.3 (0.5)** 4.7 (0.5)***	External fit	
Development-oriented	4.3 (1.0)* 4.0 (1.0)** 4.2 (1.0)***	Internal fit	
Team Learning			34 (65%)
PG Ward	89.7 (9.5)	Synergetic	
Organization learning			3 (75%)
Managerial commitment	6.6 (0.2)	High	
Systems perspective	5.7 (0.3)	High	
Openness and experimentation	5.4 (0.1)	High	
Knowledge transfer and integration	6.3 (0.5)	High	

*Note: * Operational features, ** Explicit values, *** Basic Assumption*

Table 6

Barriers and facilitators

	Barriers	**Facilitators**
Motivation	Insufficient attention and awareness for pain. (I)	Verenso's multidisciplinary guideline is perceived to improve the quality of care. (IAQ)
Multidisciplinary cooperation	Verenso's multidisciplinary guideline is perceived as complex. (IAQ) Insufficient multidisciplinary cooperation and communication (I)	Verenso's multidisciplinary guideline is perceived as improvement of the cooperation. (WIK) The teams of the ward perceived as team-oriented and development-oriented. (WAK) Verenso's multidisciplinary guideline is perceived as team-oriented .(WIK) A single extern fit on team-oriented is presented.(WIK-WAK) Sufficient multidisciplinary cooperation and communication. (I)
Structure and pro processes	Whether the Verenso's multidisciplinary guideline and the work process of the ward is laid down in a procedure, standard or protocol is perceived differently (WIK-WAK) The non-use of pain assessment tools (I) Lack of clarity about daily processes (I)	Multidisciplinary intervisions are presented (workgroup pain and MDO) (I)
Education	Verenso's multidisciplinary guideline is perceived as complex (IAQ) Skills and attitude to assess pain are insufficiently (I) According to Verenso's multidisciplinary guideline, there are more interventions for treating pain to use. On this moment, the use of multidisciplinary interventions into practice is poor (I)	A number of competences that are necessary to asses pain are presented. (I) A number of psychosocial, comfortable and pharma logical interventions are used in practice. (I) HCP's recognize the importance of assessing pain in residents with dementia. (I) The nursing teams scores synergetic on team learning. (TL) The organization has a culture that promotes the acquisition, creation, and transfer of knowledge as fundamental values. (OL)

Note: IAQ: Innovation Attitude Questionnaire, WIK: Perceived Innovation Characteristics, WAK: Perceived Ward Characteristics, TLQ: Team Learning Questionnaire, OLQ: Organization Learning Capability Questionnaire, I: Interview.

Table 7

Tailored implementation strategy (22)

Phase	Strategy	Intervention	Note
I	Configuration development strategy	Informing and motivation	Creating awareness by all disciplines by informing them about pain in dementia, Verenso's multidisciplinary guideline and the results of the implementation diagnostics.
II	Configuration development strategy	Culture	Develop consensus about multidisciplinary culture change in the organisation and shared values about pain in residents with dementia.
III	Configuration development strategy	Structure and processes	Develop and create consensus about the multidisciplinary structure and (daily) processes of pain management in the way of the Verenso's multidisciplinary guideline.
IV	Configuration development strategy	Education	Creating the competences in disciplines to use Verenso's multidisciplinary guideline in practice. Develop mono disciplinary team learning into multidisciplinary team learning.