Studies evaluating the use and implementation of nursing diagnostics in Switzerland

Pflegediagnostik – Einführung und Umsetzung Solothurn, 30th of October 2007

- **Ian Needham**, University of Applied Science, St. Gallen, Switzerland
- **Maria Müller Staub**, Pflege PES, Bern, Switzerland

Background

Recent Swiss studies

(Dissertation M. Müller Staub)

Research aims of the dissertation:

- Evaluate classifications
- Investigate effects of application/use of nursing diagnostics
- Development and testing of instrument
- Evaluate the initial implementation of nursing diagnoses, interventions and outcomes,
  and assess the effect of two educational follow-up measures

Results 1 - 3 of background studies

Evaluation of Classifications
(ICNP, ICF, NANDA, ZEFP)

- NANDA meets most criteria

Investigating application/use

- Improvements in documented diagnoses, interventions and outcomes
- Knowledge deficit in accuracy and coherence with interventions/outcomes

Results that will be presented today

Results of testing the instrument
Quality of Nursing Diagnoses, Interventions and Outcomes (Q-DIO) are presented today together with results of the

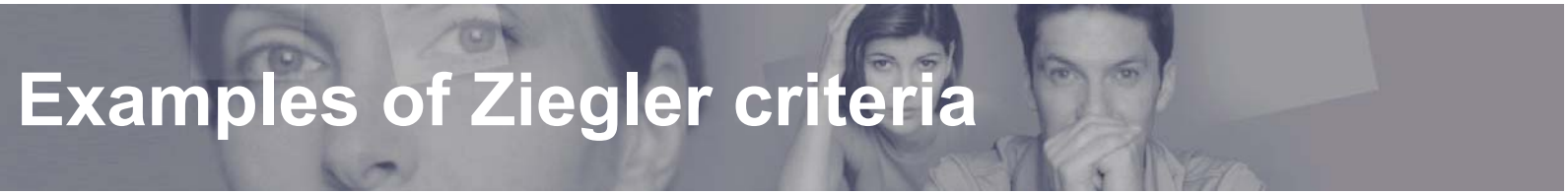
Evaluation of the initial implementation of nursing diagnoses, interventions and outcomes

Background

- The nursing process has become standard procedure
- Nursing diagnoses (NDx) are an established part of nursing care plans
- In spite of intensive training many nurses have difficulties with formulating nursing care plans (NCP) and nursing diagnoses
- Numerous attitudes exist on what constitutes a good nursing care plan

Instruments for judging NCP and NDx

- Needham/Holmes (1988) „inverse reading“ of nursing care plans
- Ziegler-Criteria
- SwiCoC (Needham)
- Q-DIO (Müller Staub)



Examples of Ziegler criteria

1. Both the response (= signs/symptoms) and aetiology components are present
2. The components are joined with a “related to” phrase
3. The response component is written first and the etiology component is written second
4. The statement is asymmetrical, not circular
5. The response component is clearly unhealthy or written as a potentially unhealthy response
6. Only one response is identified for each diagnosis statement

(Dobrzyn, 1995)

The coherence problem

Figure 2: Nursing plan for Mr. Fritz Matterhorn

Nursing diagnosis and resources	Goals	Nursing plan
ADL Rest and activity NDx Diversional activity deficit relat… depression as evidenced by lack … hope regarding recovery, fatigue, lack of daily structure and long periods of retreat to his ow… bedroom R • Is able to e… ress his sentime… • Fulfils his weekly plan	• Fulfils his weekly …n … capable of arranging his weekend leave	• Plan of weekly activities … his own activities fort … weekend • Respect the patient's feelings … time to be with the …nt • Install hope during casual conversations

ADL = activities of daily living; NDx = nursing diagnosis; R = resources

SwiCoC (Needham et al. 2000)

- **SWI**ss criteria for judging the internal **CO**herence of **C**are plans

Figure 2: Nursing plan for Mr. Fritz Matterhorn

Nursing diagnosis and resources	Goals	Nursing plan
ADL Rest and activity **NDx** Diversional activity deficit related to depression as evidenced by lack of hope regarding recovery, fatigue, lack of daily structure and long periods of retreat to his own bedroom **R** • Is able to express his sentiments • Fulfils his weekly plan	• Fulfils his weekly plan • Is capable of arranging his weekend leave	• Plan of weekly activities • Plans his own activities fort he weekend • Respect the patient's feelings • Make time to be with the patient • Install hope during casual conversations

ADL = activities of daily living; NDx = nursing diagnosis; R = resources

SwiCoC study

- To test the face validity of the SwiCoC
- To test the reliability of the SwiCoC using
  - Means
  - Standard deviation
  - Statistical testing using the binomial distribution (X ~(B, n, 0.5), α = 5%) according to Stahel
- Education of 127 nurses in the use of the SwiCoC
- Application of the SwiCoC on 6 nursing care plans
- Stipulation of the “true” interpretation of the 6 nursing care plans using the first 40 SwiCoC users
- Rejection of nurses not successfully completing the SwiCoC training i.e. Kappa < 0.4, n = 98 nurses

Care plan Fritz Matterhorn

F. Matterhorn	Mean	SD	0.05
Correct ATL	0.98	0.15	S
Problem stated	0.99	0.09	S
Aetiology stated	0.99	0.09	S
Symptom stated	1.00	0.00	S
P + Ae linked by „related to“	0.95	0.21	S
Ae + S linked by „as evidenced by“	0.99	0.09	S
P precedes E	0.99	0.09	S
E precedes S	0.99	0.09	S
1 P pro NDx	0.95	0.21	S
P not a medical/ psychiatric Dx	0.91	0.29	S
P - when necessary – specified	0.96	0.20	S
NDx not morally reprehensible	0.98	0.12	S
=> 1 resource pro NDx	0.96	0.20	S

Care plan Fritz Matterhorn (2)

F. Matterhorn	Mean	SD	0.05
Resources linked to PES	0.40	0.49	S
Goals linked to P	0.52	0.50	NS
Goals can be checked	0.35	0.48	S
All interventions linked to NDx	0.54	0.50	NS
All interventions linked to goals	0.72	0.45	S
All interventions concrete	0.70	0.46	S
Interventions within nursing domain	0.97	0.18	S
One intervention includes patient	0.25	0.44	S

Distribution over 6 care plans

Item	1	2	3	4	5	6
Resources linked to PES	0.48	0.36	0.22	0.14	0.47	0.50
Goals linked to P	0.50	0.44	0.10	0.24	0.40	0.50
Goals can be checked	0.44	0.44	0.14	0.48	0.49	0.50
All interventions linked to NDx	0.50	0.44	0.38	0.49	0.48	0.50
All interventions linked to goals	0.48	0.50	0.44	0.50	0.49	0.50
All interventions concrete	0.48	0.50	0.45	0.49	0.49	0.48
Interventions within nursing domain	0.17	0.32	0.14	0.14	0.26	0.38
One intervention includes patient	0.39	0.22	0.14	0.49	0.29	0.42

Discussion

- Concurrent manipulation of 3 variables
- Items in the upper half of the SwiCoC are simple and reliable
- Items in the lower half less reliable – more prone to subjectivity and inter-personal variability
- Maybe it is impossible to operationalise some items of the nursing care plan to render better reliability

Q-DIO

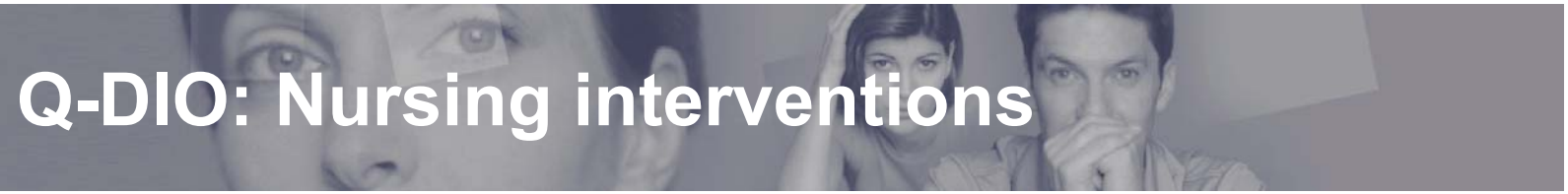
- Müller Staub (2003)
- Instrument consisting of 29 items and considering the internal coherence of nursing care plans
- Nursing diagnosis as process (N = 11) e.g actual situation, social situation
- Nursing diagnosis as product (N = 8)
- Nursing interventions (N = 3)
- Nursing sensitive patient outcomes (N = 7)

Q-DIO: Nursing diagnoses as product

12. Nursing problem/nursing diagnosis label is documented
13. Nursing diagnosis label is formulated according to NANDA and numbered
14. The aetiology (E) is documented
15. The aetiology (E) is correct, related /corresponding to the nursing diagnosis (P)
16. Signs and symptoms are formulated
17. Signs and symptoms (S) are correctly related to the nursing
18. diagnosis (P)
18. The nursing goal relates /corresponds to the nursing diagnosis
19. The nursing goal is achievable through nursing interventions

5 point scale (4, 3, 2, 1, 0)

8 Items, max = 32



Q-DIO: Nursing interventions

20. Concrete, clearly named nursing interventions according to NIC are planned (what will be done, how, how often, who does it)
21. The nursing interventions effect the aetiology of the nursing diagnosis
22. Nursing interventions carried out, are documented (what was done, how, how often, who did it)

5 point scale (4, 3, 2, 1, 0)

3 Items, max = 12

Q-DIO: Nursing sensitive patient outcomes

23. Acute, changing diagnoses are assessed daily or form shift to shift / enduring diagnoses are assessed every fourth day
24. The nursing diagnosis is reformulated
25. The nursing outcome is documented
26. The nursing outcome is observably /measurably documented (Doenges et. Al)
27. The nursing outcome shows…
    - improvement in patient's symptoms
    - improvement of patient's knowledge state
    - improvement of patient's coping strategies
    - improved self-care abilities
    - improvement functional status
28. There is a relationship between nursing sensitive patient outcomes and nursing interventions
29. Nursing outcomes and nursing diagnoses are internally related

5 point scale (4, 3, 2, 1, 0) 7 Items, max = 28

Instrument testing and NDx evaluation (Doenges et. al)

Pre- posttest study design to evaluate the intervention effect of implementing nursing diagnoses, interventions and outcomes
(Doenges et al.)

Intervention: Staff education

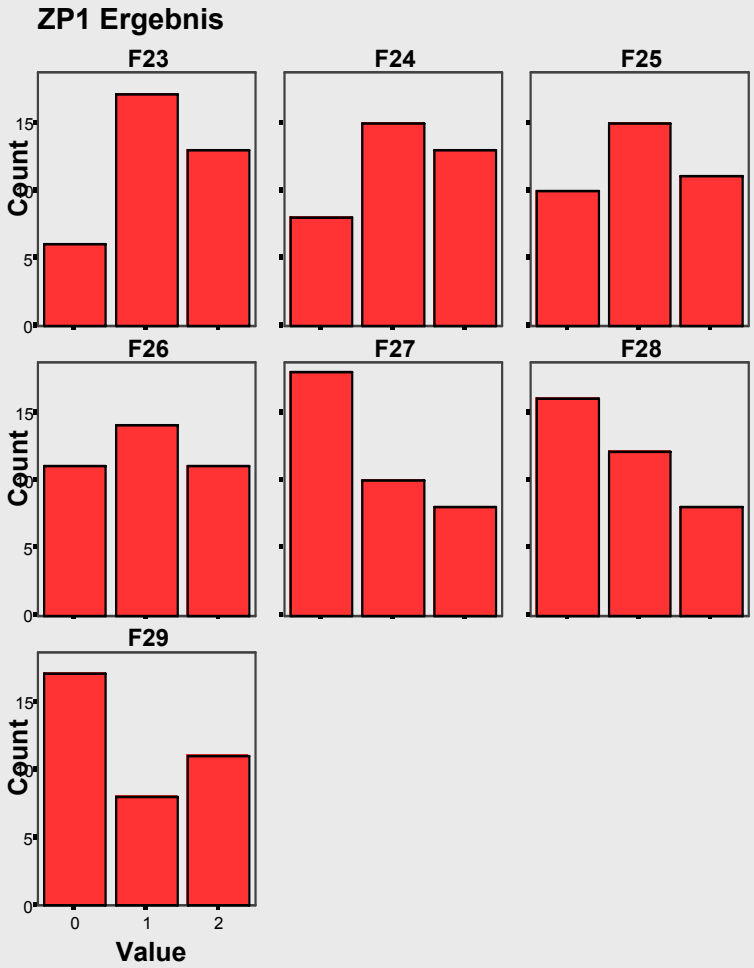
Data analysis: Applying and testing the measurement instrument Q-DIO

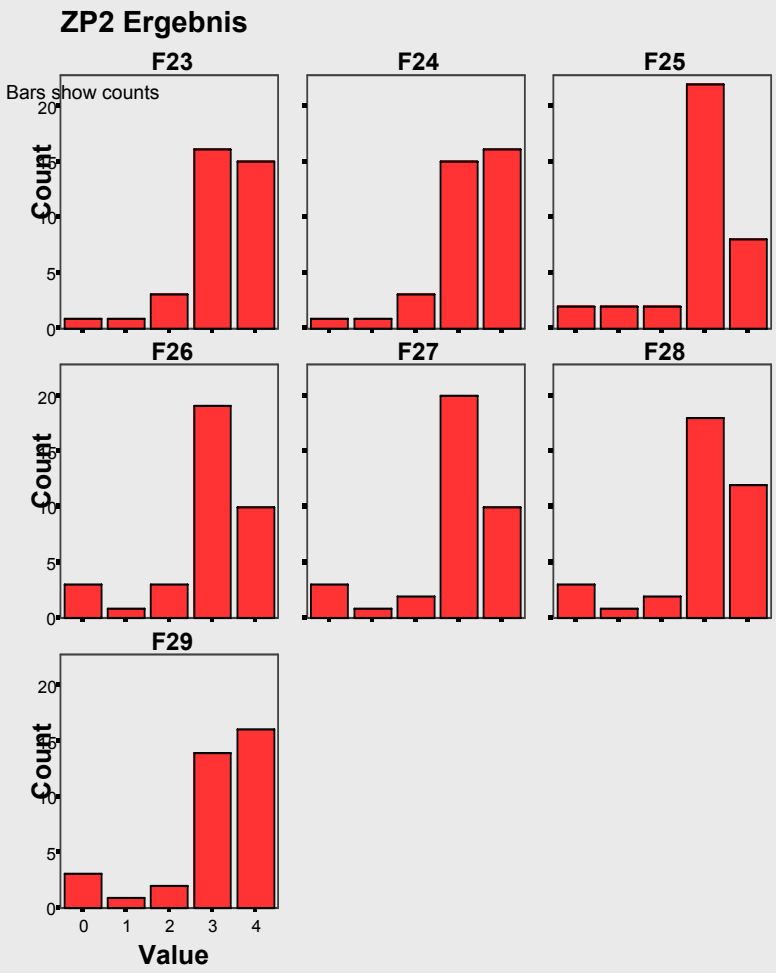
Sample

Six wards, Swiss State Hospital

72 randomly selected, documented nursing diagnoses, interventions, and outcomes

Frequencies 0 to 4 in t1 and t2





Bars show counts

NDx – use and application

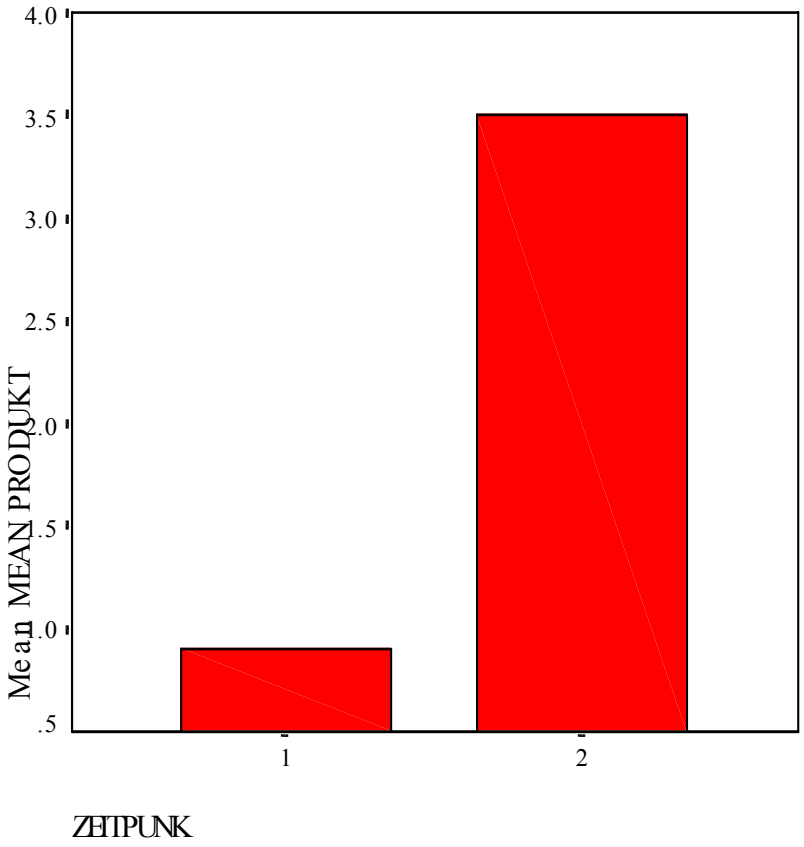
Results of Testing Q-DIO

Reliability of Q-DIO

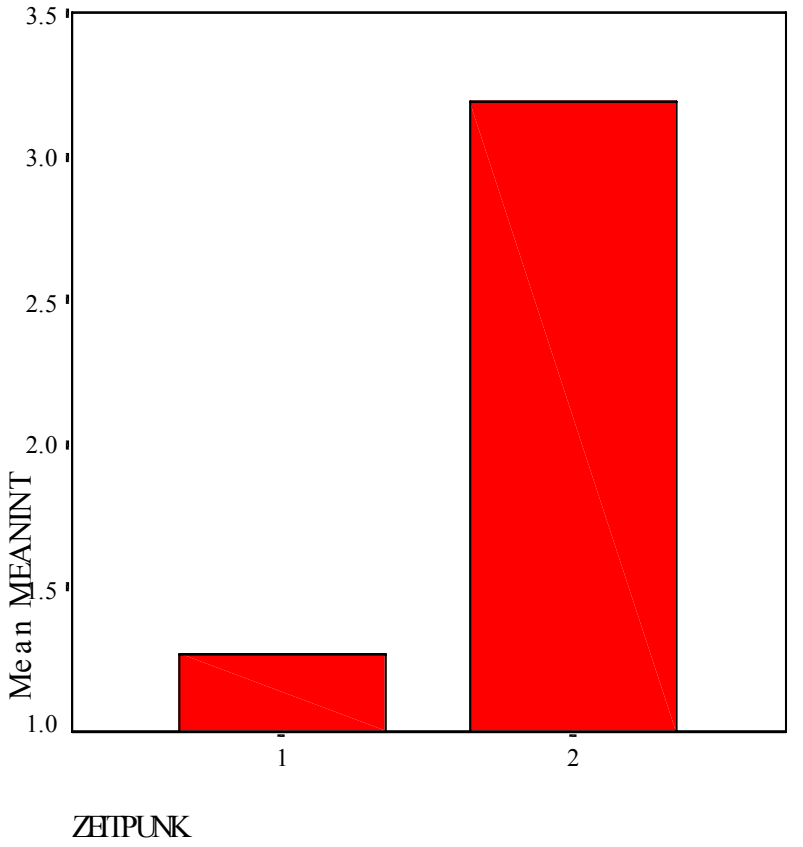
- Internal consistency: Cronbach's alpha < 0.83
- Intra-Rater reliability: Pearson's τ = 0.98
- Interrater reliability: Kappa = 0.94

Results at pre and post-test

Means product in t1 and t2



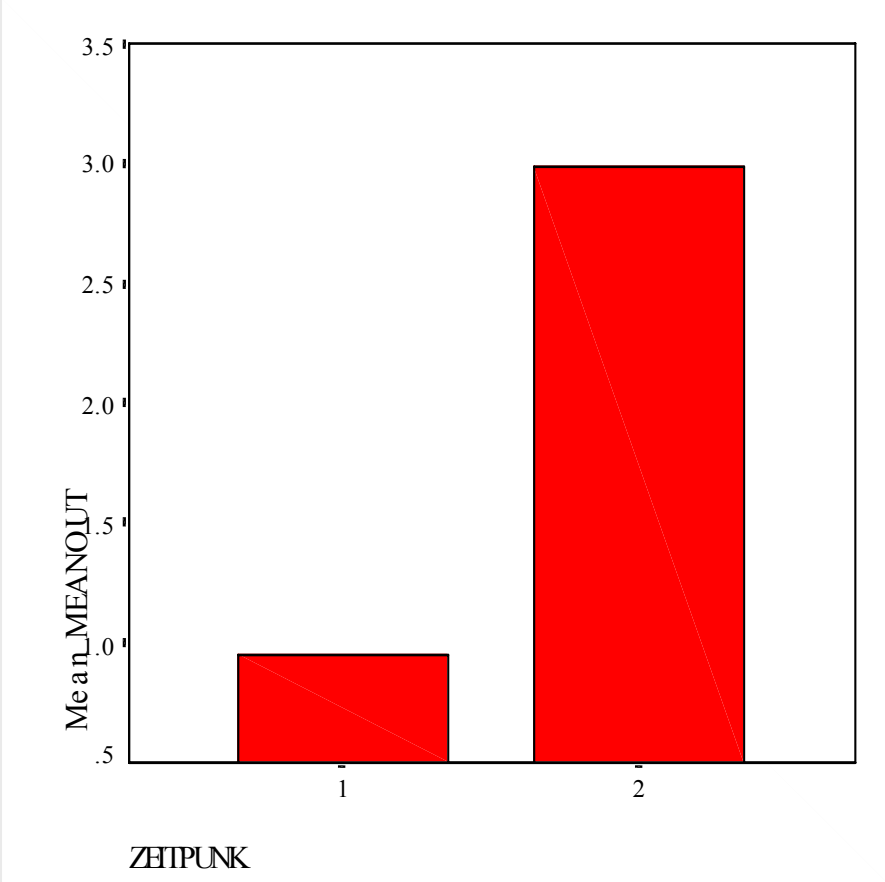
Means interventions in t1 and t2



NDx – use and application

Results at pre and post-test (2)

Means nursing outcomes in t1 and t2



General discussion

- Instruments to judge the quality of nursing diagnostics can enhance the (written) quality of nursing care plans
- Such instruments can be regarded as guidelines for nurses (especially nursing trainees)
- The validity and reliability of SwiCoC and Q-DIO established
- The instruments presented do not answer the question of the “correct” nursing diagnoses – further research is required (practical inter-diagnosticians reliability, expert opinion)

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