Structured Visualization of Expert Nursing
－ An educational program for stoma self-care －

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Opening summary

To provide an adequate educational program for patients with a stoma, we have developed an algorithm which this algorithm was divided into three parts according to the period, i.e., the preoperative period, postoperative period, and rehabilitation period. It was composed of action nodes, thinking nodes, choice branches, assessment item tables, reference tables, and candidate logic tables. Wound Ostomy Continence Nurses (WOCNs) used this algorithm. The results indicated that the algorithm did not omit any important points involved in stoma care, and that it could therefore be successfully applied to patients with a stoma.

Keywords: stoma, self-care, educational program

Purpose

Since the changes brought about by stoma surgery require that patients re-learn self-care skills, it is very difficult for the patients to cope with this situation. Therefore nurses have to provide about professional knowledges and experience techniques. To guarantee the quality of stoma care, we developed for the nurses an algorithm to help achieve this purpose. WOCNs, who are nurses specializing in stoma care, used this algorithm and provided feedback regarding its utility

Methods

The program for stoma self-care was established based on information obtained from both literature and web searches, as well as by questioning clinical nurses. We developed an algorithm according to the notational system of Tsuru et al. [1-2] This algorithm was confirmed based on feedback from WOCNs regarding its clinical application.

Results

The beginning point of the algorithm was assumed to be the preoperative period, because stoma care (e.g., stoma site marking) was begun during the preoperative period. The details of stoma care changed greatly according to the period e.g., care of the skin around the stoma and psychological support in the postoperative period, and the confirmation of sufficient stoma self-care during the rehabilitation period. As a result, the algorithm was consisted of three periods, namely the preoperative period, the postoperative period, and the rehabilitation period. This algorithm was composed of 16 action nodes, 10 thinking nodes, 12 choice branches, 9 assessment item tables, 9 reference tables, and 6 candidate logic tables. Five WOCNs reported that this algorithm did not omit any important points involved in stoma care, while it was also easily applicable to the patients.

Discussion

The expert nursing associated with stoma self-care involves structured visualization, and this algorithm allows nurses at hospitals, where there are no WOCNs, to perform appropriate specialized care. The evaluation finding of the WOCNs suggested that this algorithm can facilitate the performance of appropriate structure visualization in the learning process of stoma self-care. A future direction of this study will be to develop a computer program for this algorithm and to also verify its validity, including its cost-effectiveness.

Reference

1) Tsuru S., Nakanishi M., Watanabe C. et al. 2005 Development of Programmed Care based on structural Visualization of Expert Nursing. Japanese Journal of Nursing Administration, Vol.17 (7) pp 555-561 (Japanese)
2) Tsuru S. et al 2004. Standardization of Nursing Practice Terminology for Electric Health Record system in Health Care and Welfare service in Japan. Research report in grant from Japan Ministry of Health, labor and Welfare, total 698 pages (Japanese).

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「高度専門看護実践の構造的可視化　－ストーマ自己管理教育プログラム－」

サマリー
ストーマの自己管理に向けての教育プログラムを作成するために、ケア要素を抽出し、アルゴリズムを作成した。このアルゴリズムは、術前、術後、社会復帰後の3つのサブユニットと、行為ノード、判断ノード、判断分岐、アセスメント項目テーブル、参照テーブル、ロジック参照テーブルで構成された。このアルゴリズムを WOCN からヒヤリングをした結果は、不足しているケア要素はなく、患者に適応可能であった。

1. Purpose

ストーマ造設という腹壁に排泄経路を変更する患者の新たな排泄の自立に向けての教育には、専門的な看護実践が要求される。そこで、ストーマケアの質を保証するために、ストーマの自己管理に向けての看護実践のケア要素を抽出し、その看護ケアを構造的に可視化することでアルゴリズムを作成しヒヤリングを行なったので報告する。

2. Method

ストーマの自己管理に関するケア要素を文献と web からの検索と、臨床ナースからヒヤリングを行い抽出した。そして、水流らの表記法に従って構造化し、アルゴリズムを作成した。さらに、作成したアルゴリズムは、WOCN から臨床適応をヒヤリングし検証した。

3. Result

アルゴリズムの開始時点は、ストーマ造設前よりストーマ造設部位の決定などのケア要素が抽出されたことから術前とした。そして、手術後にはストーマケアの獲得やボディイメージの障害に対するケア、退院後にはセルフケアの継続の確認など、時期によって大きくケア内容が変更していた。そのため、術前、術後、社会復帰後の3つのサブユニットでアルゴリズムを構成した。このアルゴリズムは、行為ノード 16、判断ノード 10、判断分岐 12、アセスメント項目テーブル 9、参照テーブル 9、ロジック参照テーブル 6 から構成された。5 名の WOCN からヒヤリングをした結果は、不足しているケア要素はなく、患者に適応可能であったと評価を得た。

4. Discussion

ストーマ自己管理に向けての高度専門看護実践を構造的に可視化することで、WOCN の勤務しない病院であっても安定した高度な看護ケアの提供が可能となるため、本研究の成果は有用である。今回、ストーマケアを専門とするナースからのアルゴリズムの評価から、ストーマケアの自己管理に向けてのケアが可視化できているといえる。

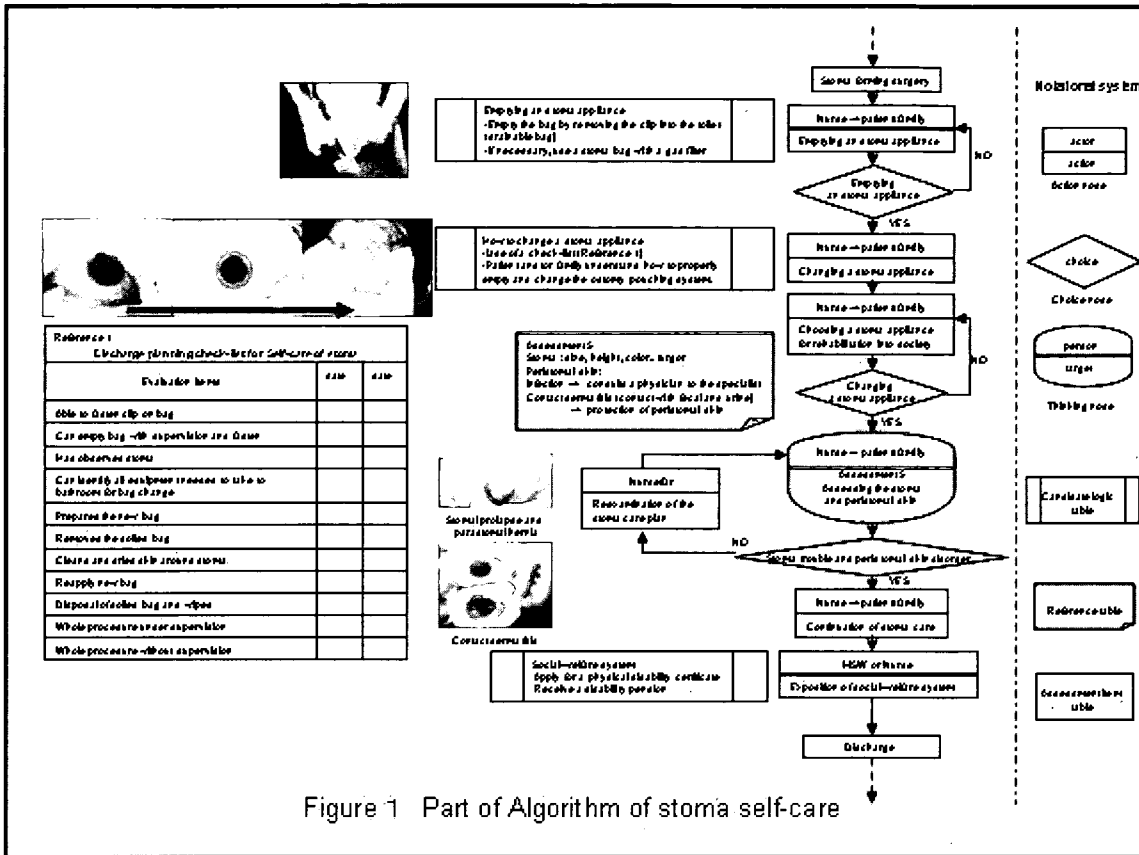今後は、コンピューター上でのシステム化とアルゴリズムの費用対効果を含めた妥当性を検証する必要がある。

Figure 1　Part of Algorithm of stoma self-care

Structured Visualization of Expert Nursing: Prevention of pressure ulcers

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Opening Summary

We made an algorithm by extracting the caring elements for the patients to develop program for pressure ulcer prevention. This algorithm consisted of observation of the patient skin as a beginning point, extraction of the risk factors for pressure ulcer development, intervention to each risk factor, and evaluation. The expert panel identified this algorithm as adequate enough to adapt to the patients.

Key words: pressure ulcer prevention, algorithm

Introductions

In recent years, there's been trend of aging patients, progress of high medical technology and decrease of hospital stay, which made nurses required advanced nursing technique. The pressure ulcer incidence has come to be used to evaluate the quality of nursing quality. Especially, pressure ulcer care has been what only the expert could do. Algorithm of the expert nursing practice would make all general nurses provide it to all the patients, resulting in improvement of quality of medical services. The purpose of this study was systematization of expert nursing technique for pressure ulcer prevention.

Methods

1) Development of care standard linked to this algorithm (1) the literature review and web searching based on EBM&N method, information collection from previous guidelines, and information collection from expert opinion. (2) The researchers developed Standard Care for Pressure Ulcer Prevention (SCPUP)

2) Establishment of internal validity of SCPUP (1)Four nurses evaluated SCPUP (2) Nine expert panels reevaluated SCPUP (3) Development of the completed version of algorithm.

3) Indication of this algorithm. This algorithm was adaptable to all hospitalized patients. The start points of this algorithm were when the patients admitted the hospital, or the patients became bedridden or chair bound. The end points were when the patients discharged or died.

Result

We set starting point of this algorithm when nurses observed the patient skin on admission. Furthermore, another starting point was set when the patients became bedridden or chair-bound in hospital having high risk factor for pressure ulcer. As a result, despite patient's state, the general nurses are constantly able to practice screening. In addition, the skin assessment tool consisting of guidance for the specific vulnerable pressure points and skin signs was developed so that general nurses could easily observe the skin integrity. In the case of no pressure ulcer the nurses observed, nurses assessed individual risk for developing pressure ulcer using an existing risk assessment scale and intervened in each identified risk factor. Nurses evaluated the intervention, and judged the necessity for the re-intervention along the algorithm.

Conclusion

This algorithm can serve as an educational tool by which general nurses learn the advanced expert interventions through utilization of their own knowledge and technique, as well as a contributor for the highly standardization of nursing care. We considered these points would improve the quality of nursing.

Challenges for the future. Risk factors for pressure ulcer development always simultaneously present, and thus nurses intervene in each risk factor simultaneously; however, the present system cannot provide multiple nursing cares in parallel. From the clinical view point, the reliability of this algorithm should be verified. This system would be used continuously by providing the same function in the case of alteration of recuperation environment such as hospital changing or discharging.

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Structured Visualization of Expert Nursing: Prevention of pressure ulcer

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サマリー

　褥瘡予防プログラムを作成するために、ケア要素を抽出し、アルゴリズムを作成した。このアルゴリズムは、患者のスキンチェックを開始点とし、褥瘡発生危険要因の抽出、各危険要因への介入、評価で構成された。このアルゴリズムは専門家パネルへのヒアリングから、不足しているケア要素はなく、患者に適応可能であった。

１．目的　Purpose

　近年、患者の高齢化、高度な医療技術の進歩、在院日数の短縮化に伴い、看護師には高度な看護技術が求められている。その質を評価する手段として、褥瘡発生率が用いられるようになってきた。特に褥瘡ケアは、従来エキスパートしかできなかったケアであり、これをアルゴリズム化することで、全ての一般看護師に提供でき、これが医療全体の質向上につながると考えられる。本研究の目的は、褥瘡予防の看護技術をシステム化することである。

２．方法　Method

【ケアの抽出方法】１）アルゴリズムに連動するケア基準の作成：EBM&N の手法をもとにした文献検索、ガイドラインからの情報収集、エキスパートオピニオンからの情報収集の３側面から得られた看護ケアのエビデンスを基に、研究者がケア基準を作成した。２）ケア計画の内的妥当性の確保：褥瘡ケアを行う看護師４名によるケア計画候補の評価の後、さらに専門家パネル９名による再評価を行い、完成版を作成した。

アルゴリズムを使用する対象者は全患者で、開始点は入院時、寝たきりあるいは座りきりになった時点、終了点は退院または死亡とした。

３．結果　Result

　全患者の入院時のスキンチェックをアルゴリズムの開始点とした。また入院中の患者においても、褥瘡発生リスクが高まる寝たきりあるいは座りきりとなった時点も開始点とし、いかなる患者の状態からもスクリーニングできるように設定した。さらに一般看護師が容易にスキンチェックできるように部位と皮膚状態のアセスメント項目テーブルを設定した。スキンチェック後、褥瘡発生無と判断された場合は、既存のリスクアセスメントスケールを用い、褥瘡発生危険因子を抽出し、さらに抽出された危険因子への介入へと連動させた。そして行った介入を評価し、再介入の必要性の有無を判断するように構成した。

４．考察　Discussion

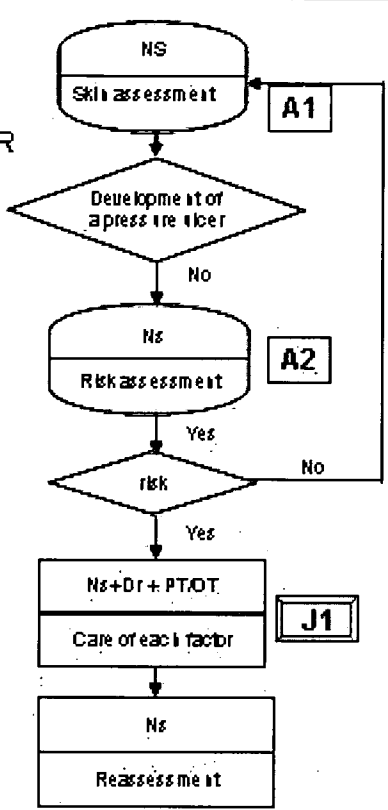　今回作成した褥瘡予防アルゴリズムは、エキスパートの視点や介入方法を中心にお

きながらも、一般看護師が通常使用しているアセスメントスケールを取り入れ、使用しやすくしたものである。これは、高度なケアの標準化のみならず、一般看護師がこれまでの知識や技術を活かしながら、さらにエキスパート独自の高度な介入方法を学習できるという教育ツールとしても使用できる。このことが、看護の質を向上させるのではないかと考える。課題は、ソフト面では、褥瘡ケアの特徴として、危険因子が同時に存在し、同時に介入する必要があるが、現在のシステムではケアの並列化ができないため今後、この点を改善していく必要がある。臨床面では、アルゴリズムの信頼性の検証を行うこと、展望として、転院や在宅看護など、療養環境が変更後も同様なシステムしていれば継続使用可能であると考えられる。

RESULTS:

PREVENTION OF PRESSURE ULCER ALGORITHM

NS
Skin assessment
A1

Development of a pressure ulcer

No

Ns
Risk assessment
A2

Yes

risk

No

Yes

Ns + Dr + PT/OT
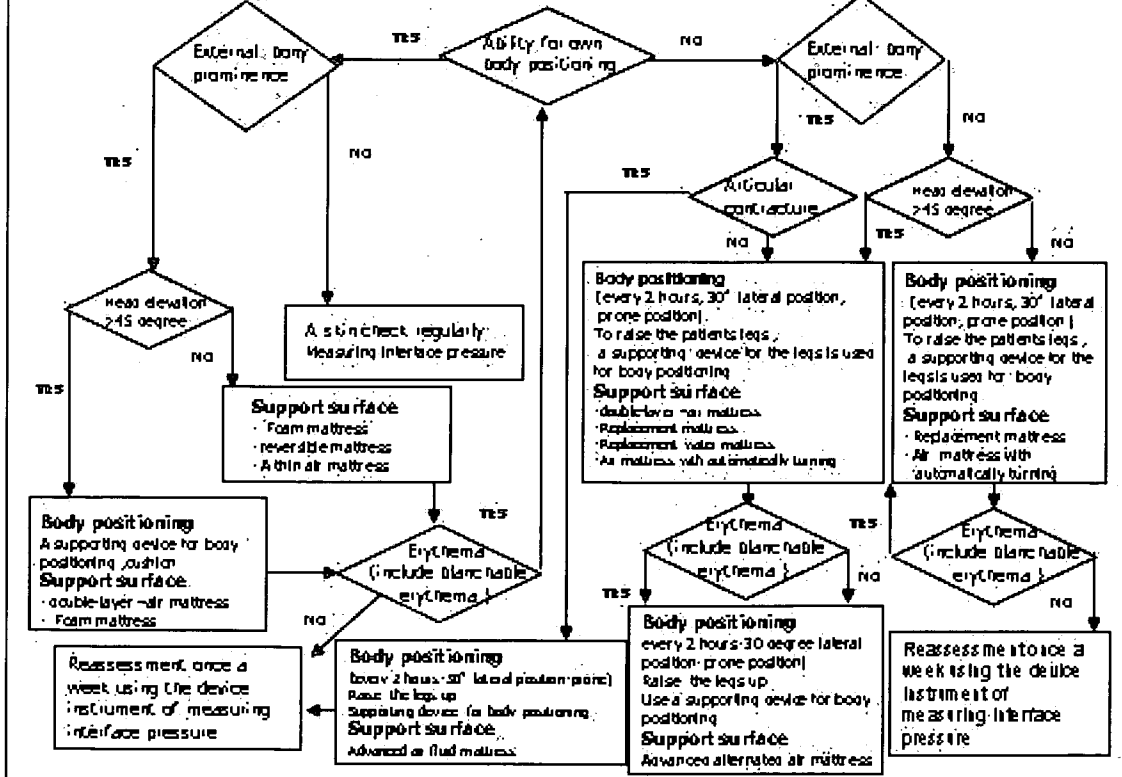Care of each factor
J1

Ns
Reassessment

A2 Assessment item table

- **Government proposed tool**
- **Braden Scale**
- **K Scale**

*Nurses can choose to one of the three risk assessment scales

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EX: PRESSURE RELIEF AT BED

External bony prominence — YES — Ability for own body positioning — NO — External bony prominence

YES / NO — YES / NO

Head elevation >45 degree — NO

Articular contracture — NO / YES

Head elevation >45 degree — YES / NO

Assign check regularly Measuring interface pressure

Body positioning
(every 2 hours, 30° lateral position, prone position).
To raise the patients legs,
a supporting device for the legs is used for body positioning
Support surface
- double-layer air mattress
- Replacement mattress
- Replacement static mattress
- Air mattress with automatically turning

Body positioning
(every 2 hours, 30° lateral position, prone position)
To raise the patients legs,
a supporting device for the legs is used for body positioning
Support surface
- Replacement mattress
- Air mattress with automatically turning

Support surface
- Foam mattress
- reversible mattress
- A thin air mattress

Body positioning
A supporting device for body positioning ,cushion
Support surface
- double-layer air mattress
- Foam mattress

Erythema (include blanchable erythema) — YES / NO

Erythema (include blanchable erythema) — YES / NO

Erythema (include blanchable erythema) — YES / NO

Reassessment once a week using the device instrument of measuring interface pressure

Body positioning
every 2 hours, 30° lateral position, prone position
Raise the legs up
Supporting device for body positioning
Support surface
Advanced air fluid mattress

Body positioning
every 2 hours 30 degree lateral position, prone position
Raise the legs up
Use a supporting device for body positioning
Support surface
Advanced alternated air mattress

Reassessment once a week using the device instrument of measuring interface pressure

Structural visualization of expert nursing: care to prevent tuberculosis infection for outpatients at their hospital visits

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Opening summary

Tuberculosis infection poses a serious challenge for preventing transmission of contagious diseases at medical treatment facilities in Japan. The authors have therefore developed an algorithm for providing care to prevent tuberculosis infection during the critical period between initial consultation and being admitted to the hospital.

Keywords: Algorithm, tuberculosis infection, infection control, expert nursing

Introduction

Tuberculosis, which is an airborne disease, requires a quick, coordinated response from those involved from medical treatment facilities to local area at onset of the disease when it is most contagious. There is however few facilities in Japan equipped to handle tuberculosis patients. Care is therefore provided to tuberculosis patients and patients who could possibly be infected with tuberculosis at those facilities. In order to contribute to prevention of tuberculosis infection and the advancement nursing care, the authors set about to develop an algorithm for providing care to prevent tuberculosis infection at facilities that are not equipped for handling tuberculosis patients.

Methods

1. Nursing practice terminology for prevention of tuberculosis infection was carefully selected by our research group consisting of accredited nurses for infection control and health administrators based on the following materials: the tuberculosis prevention method, the guidelines of JNA (Japanese Nursing Association) and CDC (Centers for Disease Control and Prevention), and researches by Japanese society of nursing care and infection control.

2. The algorithm for providing care to prevent tuberculosis infection at facilities that are not equipped for handling tuberculosis patients was created using the "Standard Nursing Practice Terminology Master" by Satoko Tsuru, et al

Results

The algorithm was created based on the following three factors: 1)coordination with local medical treatment facilities

and mandatory hospitalization in accordance with the laws, 2)tests and prevention of infection on scientific grounds and 3)psychological care for patients and their families based on Infection control nursing.

Close collaboration between nurses and ability to make decisions were indispensable for these three elements. As a result, the algorithm helps prevent contamination within the hospital, helps prevent hospital staff from being infected and helps prevent contamination in cities.

Discussion

Tuberculosis infection can be prevented by implementing the algorithm, but the ability to perform fundamental infection control and lots of work are required of nurses who deal with outpatients. In the future the usefulness of the algorithm needs to be studied by interviewing outpatient nurses, etc.

Reference

[1] Tsuru S., Nakanishi M., Watanabe C. et al 2005. Development of Programmed Care based on structural Visualization of Expert Nursing. Japanese Journal of Nursing Administration, Vol 17 (7) pp 555-561 (Japanese).

[2] Tsuru S. et al. 2004. Standardization of Nursing Practice Terminology for Electric Health Record system in Health Care and Welfare service in Japan. Research report in grant from Japan Ministry of Health, Labor and Welfare. total 698 pages (Japanese).

[3] Julia S.Garner et al 1996 Guideline for isolation precautions in hospitals. Infection Control And Hospital Epidemilogy, Vol.17(1)pp.53-80(USA).

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Structural visualization of expert nursing: 外来受診時における結核感染防止ケア

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[c] 北里大学病院, 神奈川県, Japan ; [d] 東京大学, 東京都, Japan

Opening Summary

日本の医療施設の感染防止上、大きな問題となっているのが結核感染である。よって我々は、結核の感染防止において、最も重要とされる外来～入院までの結核感染防止ケアに関するアルゴリズムを開発した。

Keywords:
結核感染防止のアルゴリズム、結核感染の予防的ケア

Introduction

空気感染である結核は、感染力が強く発症時には医療施設から地域まで連携した迅速な対応を迫られる。しかし日本において結核病床を有する施設は少なく、結核病床を有しない施設において、結核感染患者、または結核感染の可能性のある患者のケアを行っている現状がある。よって、結核感染防止と感染看護の発展に資するために、「結核病床を有しない施設における結核感染の予防的ケア」のアルゴリズムの開発に取り組んだ。

Methods

1. 結核感染防止に関する看護実践用語は、結核予防法、日本看護協会とCDC(Centers for Disease Control and Prevention)の Guideline、日本感染看護学会関連の研究を資料として、感染管理認定看護師、衛生管理者が存在する当研究グループで精選した。

2. 精選した看護実践用語を、水流聡子らの「看護実践用語標準マスター」を用いて、「結核病床を有しない施設における結核感染の予防的ケア」のアルゴリズムを作成した。

Results

当アルゴリズムは、「法律に基づく地域医療施設との連携や命令入所」、「科学的根拠に基づく検査・感染防止」、「感染看護に基づく患者・家族への精神的ケア」により構成された。その３つの構成には、看護師・医師の密接な連携と判断能力が必要不可欠となった。よってアルゴリズムのアウトカムに、院内感染防止・職業感染防止・市中感染防止が成立した。

Discussion

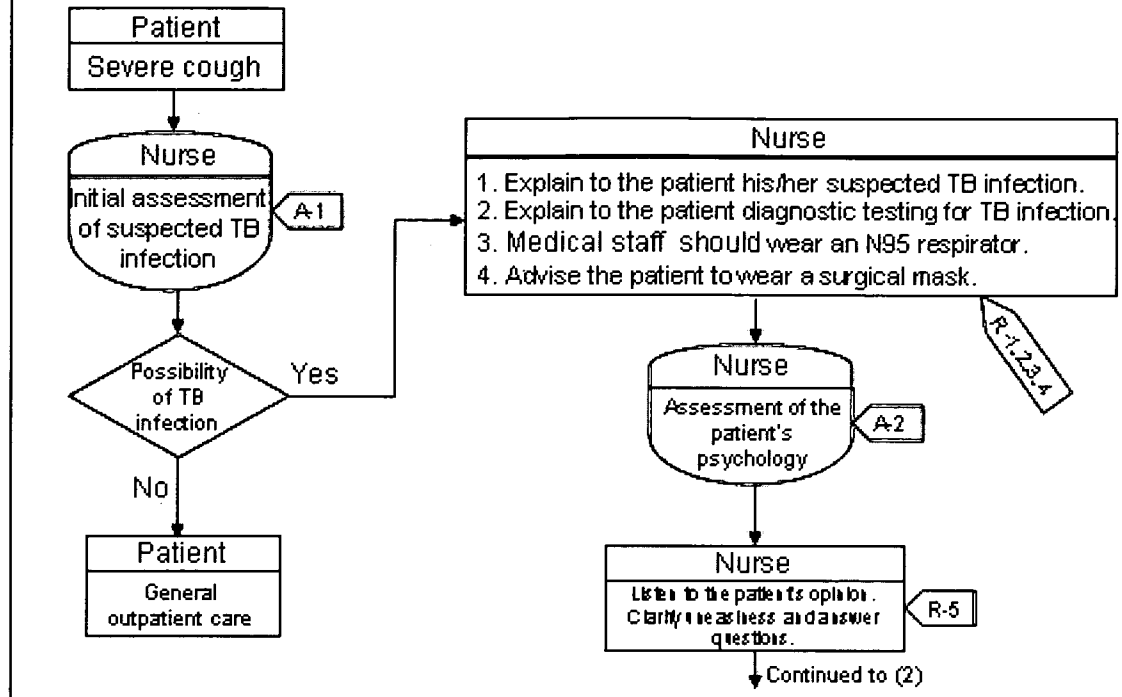当アルゴリズムを遂行により結核感染は防止できるが、外来看護師に基礎的な感染管理能力と多くの業務量を要するものとなった。今後は外来看護師を対象にヒアリング調査
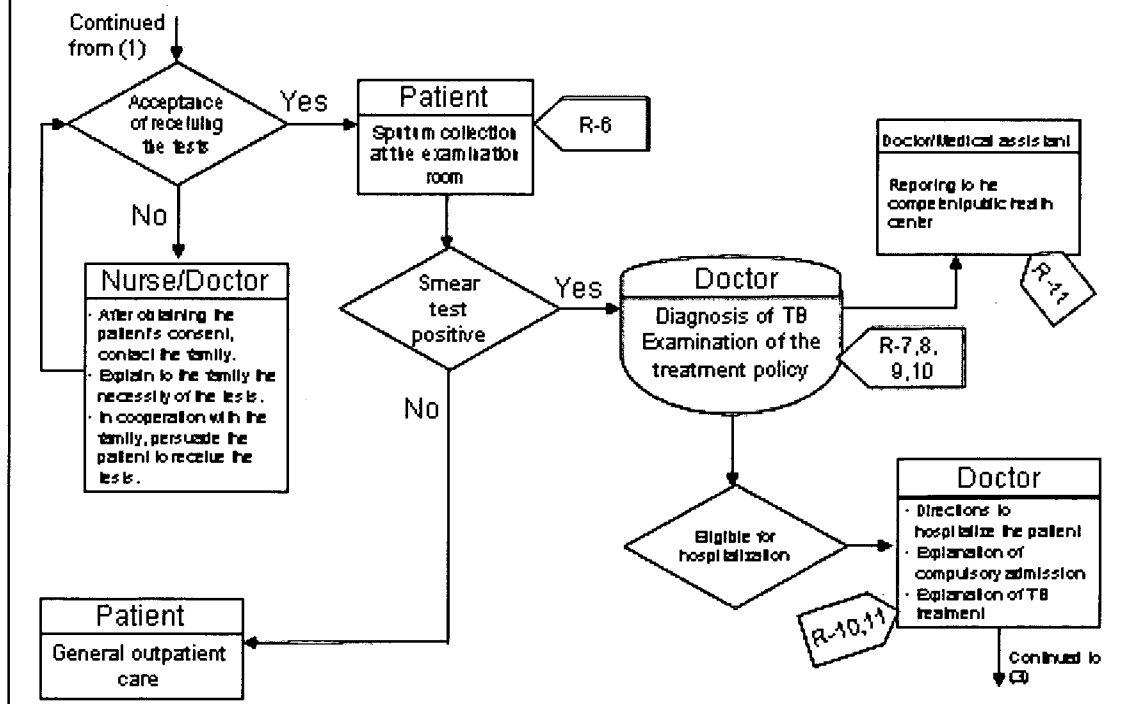
などを用いて、このアルゴリズムの有用性を　　検討する必要がある。

References

Tsuru S., Nakanishi M., Watanabe C. et al. 2005. Development of Programmed Care based on structual Visualization of Expert Nursing. Japanese Journal of Nursing Administration, Vol.17 (7) pp.555-561 (Japanese).

Tsuru S. et al. 2004. Standardization of Nursing Practice Terminology for Electric Health Record system in Health Care and Welfare service in Japan. Research report in grant from Japan Ministry of Health, labor and Welfare, total 698 pages (Japanese).
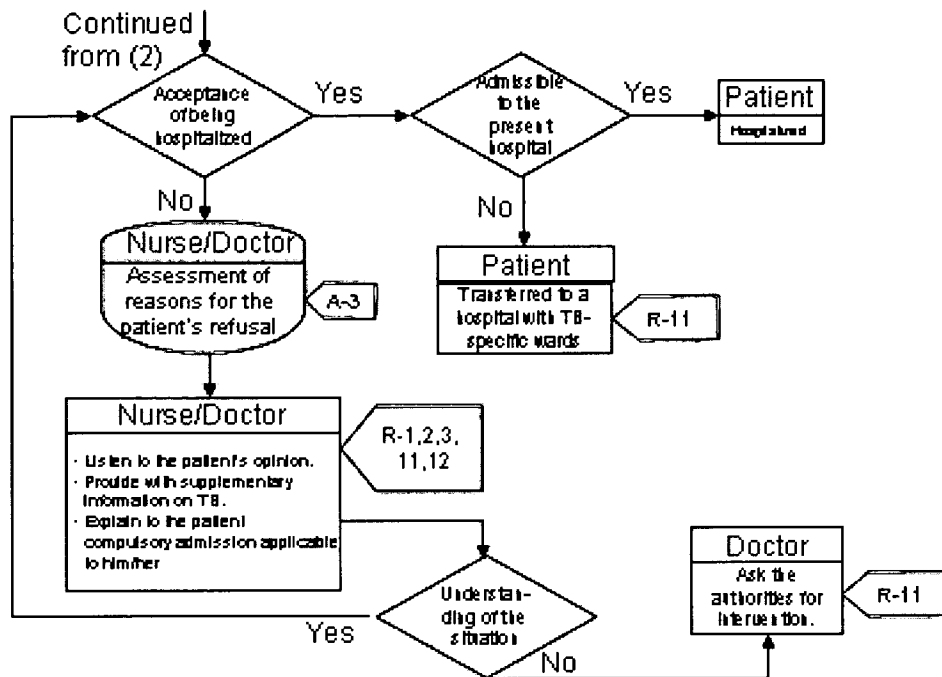
Care to prevent TB infection for outpatients at their hospital visits (1)
Hospital visit ~ Before testing

Patient

Severe cough

↓

Nurse

Initial assessment of suspected TB infection — A-1

↓

Nurse

1. Explain to the patient his/her suspected TB infection.
2. Explain to the patient diagnostic testing for TB infection.
3. Medical staff should wear an N95 respirator.
4. Advise the patient to wear a surgical mask.

R-1,2,3,4

Possibility of TB infection → Yes

↓ No

Patient

General outpatient care

Nurse

Assessment of the patient's psychology — A-2

↓

Nurse

Listen to the patient's opinion. Clarify the issues and answer questions. — R-5

↓ Continued to (2)

Care to prevent TB infection for outpatients at their hospital visits (2)
Testing ~ Diagnosis of TB

Continued from (1)

↓

Acceptance of receiving the tests → Yes

↓ No

Patient

Sputum collection at the examination room — R-6

Nurse/Doctor

- After obtaining the patient's consent, contact the family.
- Explain to the family the necessity of the tests.
- In cooperation with the family, persuade the patient to receive the tests.

↓

Smear test positive → Yes

↓ No

Doctor

Diagnosis of TB Examination of the treatment policy — R-7,8,9,10

Doctor/Medical assistant

Reporting to the competent public health center — R-11

Eligible for hospitalization

Doctor

- Directions to hospitalize the patient
- Explanation of compulsory admission
- Explanation of TB treatment

R-10,11

Patient

General outpatient care

Continued to (3)

-101-

Care to prevent TB infection for outpatients at their hospital visits (3)
Explanation of compulsory admission ~ Hospitalization

Continued from (2)

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                    ┌─────────┐                      ┌─────────┐
                    │Acceptance│      Yes             │Admissible│      Yes      ┌──────────┐
                    │ of being ├─────────────────────►│  to the  ├─────────────►│ Patient  │
                    │hospitalized│                    │ present  │              ├──────────┤
                    └────┬─────┘                      │ hospital │              │Hospitalized│
                         │ No                         └────┬─────┘              └──────────┘
                         ▼                                 │ No
                 ┌──────────────┐                          ▼
                 │ Nurse/Doctor │                   ┌──────────────┐
                 ├──────────────┤                   │   Patient    │
                 │Assessment of │  ◄── A-3          ├──────────────┤
                 │reasons for the│                  │Transferred to a│ ◄── R-11
                 │patient's refusal│                │hospital with TB-│
                 └──────┬───────┘                   │ specific wards │
                        │                           └──────────────┘
                        ▼
                 ┌──────────────┐
                 │ Nurse/Doctor │     ◄── R-1,2,3,
                 ├──────────────┤          11,12
                 │· Listen to the patient's opinion.│
                 │· Provide with supplementary│
                 │  information on TB.│
                 │· Explain to the patient│
                 │  compulsory admission applicable│
                 │  to him/her │              ┌──────────┐              ┌──────────┐
                 └──────────────┘             │Understan-│              │  Doctor  │
                              Yes             │ ding of the│            ├──────────┤
                        └───────────────────► │ situation │            │ Ask the  │ ◄── R-11
                                              └────┬─────┘             │authorities for│
                                                   │ No                │intervention.│
                                                   └──────────────────►└──────────┘
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Structural visualization of highly-specialized practice on nursing and midwifery: Nurse-Midwife's Monitoring and Caring during labor and delivery

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Abstract

Structural visualization was implemented on nurse-midwife's care during labor and delivery requiring highly-specialized practice on nursing and midwifery. From discussion about our former researches and literature review, and using algorithm notion method, we made the algorithm of monitoring and caring process by the nurse-midwife. It is thought that visualization of nursing and midwifery practice and the thinking process of expert nurse-midwives which have not been expressly stated previously can become a foundation for more advanced nursing care throughout the profession.

Keywords: Monitoring and Caring by Expert Nurse-Midwife, Structural Visualization, Algorithm

Introduction

In our former researches, we reported expert nurse-midwives have tendencies to use no / low invasive manner to gather the data of the pregnant woman and her fetus through continuous monitoring, and their monitoring and caring take place simultaneously. Because of the no / low invasive manner and sound process used by them, we had to realize what happen between expectant mother and midwives. So, we tried to structural visualization on monitoring and care during labor and delivery by the expert nurse-midwife using algorithm notion method.

Method

1. The literature review and discussion by researchers
2. Structuring of monitoring and caring process by expert nurse-midwife following algorithm notation method.
3. Feedback from clinical nurse-midwives regarding this structuring

Results

From the discussion of our former researches and the literature review, it was suggested that nurse-midwives gather the data continuously, assess the progress repeatedly under appropriate timing, select the direction of caring, and take care to them to support natural process of labor and delivery. And this process occurred simultaneously. In our former researches the framework of gather the data was reassuring the fetus's wellness, reassuring the woman's safety, grasping the progress of delivery, and grasping the woman's sense of control. And

the directions of care selected were continuation / keeping that situation, promotion, and suppressing. If medical risk arise, it is needed the rapid shifting of the direction of caring from natural caring by nurse-midwife to medical interventions by cooperation between obstetricians and nurse-midwives.

From the results of our discussion, we tried to make the program of the monitoring and caring process, apply the program to clinical cases, and brush up the program. Using algorithm notion method, we made the algorithm of monitoring and caring process during labor and delivery by the nurse-midwife.

Conclusion

We tried to make structural visualization of the process of nurse-midwife's monitoring and caring during labor and delivery using algorithm notion method. Visualizing the thinking processes and the practice of expert nurses-midwives which have not been expressly stated previously can become a foundation for more advanced nursing care throughout the profession

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看護-助産領域の高度専門実践における構造的な可視化作業
- 看護-助産師による分娩時のモニタリングとケア -

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段ノ上秀雄 c，水流聡子 c
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抄録

　看護-助産領域の高度専門実践における分娩経過中の看護-助産師によるケアについての構造的な可視化の作業を行った。研究者間の討議と文献レビューとアルゴリズムの表記法に基づいて、看護-助産師によるモニタリングとケアのプロセスのアルゴリズムを作成した。看護と助産のケア実践やエキスパート助産師による思考プロセスを可視化することは、この領域の専門職全員がより高度な看護を実践するための基礎となると考える。

キーワード：エキスパート助産師によるモニタリングとケア，構造的な可視化作業，アルゴリズム

イントロダクション

　我々は先行研究において、エキスパート助産師は持続的なモニタリング状況下で産婦と胎児の情報収集の方法として、より侵襲性のない／低い方法を用い、またそれらのモニタリングとケアが同時発生している傾向があることを報告した。より侵襲性のない／低い情報収集の方法や静かな実践プロセスを用いているために、産婦と助産師の間にどのようなことが起こっているのかを理解することが難しい状況にある。そこで、我々は、エキスパート看護-助産師が分娩経過中の産婦に対して行っているモニタリングとケアを、アルゴリズムを用いての可視化を試みたので報告する。

方法

１．文献検討と研究者間のディスカッション
２．エキスパート看護-助産師によるモニタリングとケアのプロセスを、アルゴリズム表記法を用いて構造化する。
３．この構造化に対して臨床の助産師に検証してもらい、フィードバックしてもらう。

結果

　我々の先行研究のディスカッションと文献検討の結果から、看護-助産師は産婦の情報を継続的に収集し、適切なタイミングで繰り返し分娩進行状態をアセスメントし、ケアの方向性を決定し、分娩がより自然なプロセスで進行するようにサポートしていることが明らかとなった。またこのプロセスは、同時発生していた。さらに、我々の先行研究において、情報収集の枠組みが明らかとなっており、それは「胎児のWellness の保証」「産婦の安全の保証」「分娩進行状態の把握」「産婦の身体的・心理的頑張り度の把握」の４つの方向性を持っていた。選択されたケアの方向性は、「ケアの

継続する方向の関わり（現在の状況を維持する）」「促進する方向の関わり」「抑制する方向の関わり」であった。医学的なリスクが発生した場合には、看護‐助産師による自然な方向のケアから産科医と看護‐助産師の協働で行われる医学的介入へと急速にシフトする。

　上記のような我々の討議の結果から、モニタリングとケアのプロセスのプログラムを作成し、臨床のケース数例に対して適用し、プログラムの精選を行った。最終的に、我々は、アルゴリズム表記法を用いて、我々は、看護‐助産師による分娩経過中のモニタリングとケアのプロセスのアルゴリズムを開発した。

結論

　我々はアルゴリズム notion method を用いて、助産師による分娩経過中のモニタリングとケアのプロセスを構造的に可視化する作業を試みた。先に述べたように、エキスパート助産師の思考プロセスと実践を可視化することは、この領域の専門職がより高度な看護を実践するための基礎となると考える。

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Structural Visualization of Highly-Specialized Practice on Nursing and Midwifery:
Nurse-Midwife's Monitoring and Caring during labor and delivery

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Introduction

In our former researches, we reported expert nurse-midwives have tendencies to use no / low invasive manner to gather the data of the pregnant woman and her fetus through continuous monitoring, and their monitoring and caring take place simultaneously. Because of the no / low invasive manner and sound process used by them, we hard to realize what happen between expectant mother and midwives. So, we tried to structural visualization on monitoring and care during labor and delivery by the expert nurse-midwife using algorithm notion method.

Method

The literature review and discussion by researchers

Structuring of monitoring and caring process by expert nurse-midwife following algorithm notation method

Apply this process to the clinical cases to verify.

Results

From the discussion of our former researches and the literature review, it was suggested that nurse-midwives gather the data continuously, assess the progress repeatedly under appropriate timing, select the direction of caring, and take care to them to support natural process of labor and delivery. And this process occurred simultaneously. In our former researches, the framework of gather the data was reassuring the fetus's wellness, reassuring the woman's safety, grasping the progress of delivery, and grasping the woman's sense of control. And the directions of care selected were continuation / keeping that situation, promotion, and suppressing. If medical risk arise, it is needed the rapid shifting

of the direction of caring from natural caring by nurse-midwife to medical intervention by cooperation between obstetricians and nurse-midwives

From the results of our discussion and using algorithm notion method developed by Tsuru et al, we made the algorithm of monitoring and caring process during labor and delivery (Figure 1), the clinical process chart (Figure 2), and the logic table of transfer from one unit to another unit (Table)

Then we applied the process chart to 60 clinical cases there were relatively low-risk (41 vaginal delivery cases and 19 cesarean section cases) and brush up the process chart. All of these cases could clear the process of that process chart but we need to develop more unit to transfer for example rupture of membrane

Conclusion

We tried to make structural visualization of the process of nurse-midwife's monitoring and caring during labor and delivery using algorithm notion method. Visualizing the thinking processes and the practice of expert nurses-midwives which have not been expressly stated previously can become a foundation for more advanced nursing care throughout the profession.

Figure 2 Clinical Process Chart for Labor and Delivery Ver2

Table Logic Table of Transfer from A-4 Unit to Another Unit

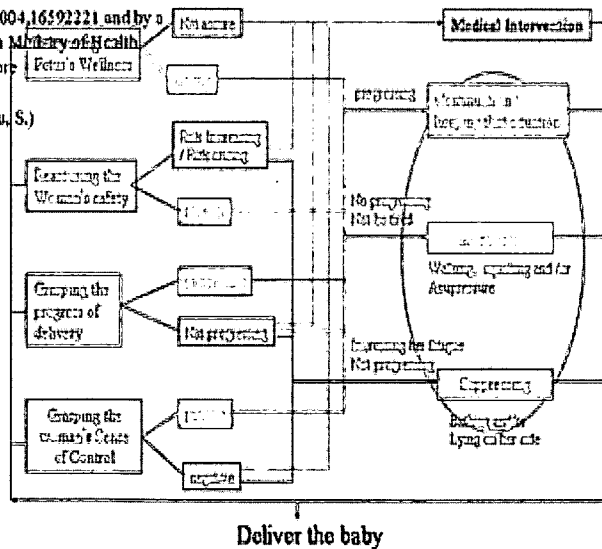|	Criteria Regulated by The woman's Situation	Unit to Transfer
Logic of Transfer	①Full Open of the Cervix ②Cycle of Contraction From 2 to 4 minutes ③Contraction Within 50 to 60 seconds	A-4
	Decision of C/S	B-1
	Except Above Situations	Staying at A-4

Deliver the baby

Figure 1 Direction of Care for the Delivering the Baby

Structural Visualization of Expert Nursing:
Expert Nursing Care for a Patient undergoing outpatient Radiotherapy

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Opening Summary

In past, almost all patients underwent radio therapy during the hospital stay. So nurses take care of patients after radio therapy in hospital where patients can receive nursing care for 24 hours. However, recently more and more patients have undergone radio therapy at clinic as outpatient. This benefits them in enabling them to receive the therapy with improving QOL, and remaining their style of living, on the other hand this requires their much self-care ability and patient compliance of outpatient visit depends on their own positive decision making. Nurses are considered to make decisions or take implementation of various kinds of intervention in limited time of pre and post proceedings of the therapy when they accommodate patients directly. The process of their intervention has not so far clarified so that quality of the care depends on degree of each individual's capacity or devotion. In addition, with trend of decrease of hospitalized days, it is predicted that more and more patients undergo outpatient radiotherapy. So it is significant to clarify the process for quality assurance of nursing.

Keywords: Nursing Practice Terminology, outpatient, radiotherapy nursing

Introduction

This study provides the report on survey of outpatient radiotherapy focusing on what practice nurses take and what decision they make

Method

Collecting information from the literature review and web searches on radiotherapy nursing, the interview was held with 5 nurses in pursuance of radiotherapy nursing, who accepted of the purpose of this study. The subject nurses were 1 charge nurse, 2 chief nurses and 2 staff nurse in several hospitals with 300-500 beds.

Results

Basic knowledge and information about process of radiotherapy were available from the literature review and web search. From the interview we extracted 3 types of important intervention. "Interventions for patient compliance of outpatient visit", "Predictive education for radiotherapy side effect" and "judgment of necessity for doctor intervention and proposal of it"

Among others, about radiotherapy side effect nurses were clarified to make expert decision and take implementation of intervention adaptive for patient conditions

Discussion

Resource of time when nurses can take interventions to patients is limited. For implementing process from screening, judgment to intervention within the resource, it is useful to show the structure of the thinking process. In addition, radiotherapy involves not only nurses but also doctors, radiologic technologist and etc. So development of the structure for sharing the information and the process is supposed very significant hereafter

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外来放射線治療における看護実践

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Opening Summary
過去において放射線療法はその大半が患者の入院期間中に実施され、照射後のフォローも病棟において２４時間の看護ケア提供体制のもとで行われていた。しかし近年、外来通院によってその治療が実施されるケースが増加してきている。このことは、患者のＱＯＬを高め現状の生活を維持しつつ治療を行うことができるというメリットを生むが、医療機関内以外で過ごす間の患者自身のセルフケア能力の必要性が高く、受診行動も患者の能動的な意思決定にゆだねられることとなる。看護者が直接患者と接する時間は、外来において患者が治療を受ける前後と限られており、この間に看護者は患者が治療を継続していくために様々な介入の判断・実施を行っていると考えられるが、現在このプロセスに関して明らかにされたものはなく個人の努力によるところが大きい現状である。また、在院日数が減少にともない、今後外来における放射線治療はますます増加していくと予測され、患者への看護の質を保証するためにもこのプロセスを明らかにしていくことの意味は大きいと考える。

Key Word: 看護実践用語、外来、放射線治療看護

Introduction
本研究では、外来放射線治療において看護職がどのような実践を行っているのか、どのような判断をしているのかに着目し、調査を行ったのでここに報告する。

Method
文献レビューとウェブ上から放射線治療における看護について調査するとともに、外来放射線治療に携わる看護職で研究の主旨に同意し了承の得られた５名を対象に半構成インタビューを行った。
対象は、300-500 床規模の病院に所属する師長１名、主任２名、スタッフ２名の計５名であった。

Results
文献や web 情報からは、放射線療法の経過についての概略に関する基礎的な知識を得ることができたが。またインタビュー結果からは、放射線治療において重要な介入として「治療継続のための介入」「副作用に関する予測的な教育」「医師介入の必要性の判断と提案」の３つが抽出された。
中でも、放射線治療による副作用について

は、対象の状態に合わせた専門的な判断と介入を行っていることが明らかとなった。

Discussion

　外来で患者に関わる時間は限られており、その間にスクリーニングから判断・介入へと進むためには、この思考過程の構造を示していくことが有用であると考える。また、放射線治療の場には、看護職だけでなく、医師・放射線技師等々が関わっており、このプロセスとそこにある情報を共有していくための構造づくりが今後必要となると考える。

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Structural Visualization of Expert Nursing: Expert Nursing Care for Extravasation of Anticancer Agent

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Opening Summary

Chemotherapy aims to cure cancers or inhibit the growth of cancer cell by administering the anticancer agent in blood vessel (BV) to the cancer body. So it is very important to inject the agent in BV without fail because there is risk of extravasation which brings about the chemical necrosis of tissue around. Thus, nurse involved in Chemotherapy care should learn to take interventions for preventing from extravasation and immediate treatment for it in the case. In the interventions there are care practices with advanced thinking process.

Clarification of such thinking process contributes to visualization of nursing practice and support for nurse to learn expert nursing practices. Also it is supposed to realize the nursing quality assurance for care receiver - patients.

Keywords: Nursing Practice Terminology, Chemotherapy, Expert nursing, extravasation

Introduction

In this study we attempted to clarify the structure of intervention processes by nurse for minimizing the effect of extravasation and immediate treatment for it as well as the thinking process.

Method

(1) The literature review and web searches on nursing care of Chemotherapy

(2) Interviews with nurses in clinical practice

(3) Describe the care practices with the rule of algorithm notation [1]

(4) Brush up the algorithm by addition and modifying with Chemotherapy certified nurse's validation.

Results

From literature and information on web, several examples of indispensable interventions were available so that essential knowledge was extracted from them. However, in Japan, there's no specified standard or protocol. Interview with clinical nurse clarified that nurses learn knowledge from literatures and web page but depend much on their own experiment when they take the interventions.

2 types of process were specified from interview and feedback with clinical nurse involved in Chemotherapy "Selecting blood vessel for preventing from extravasation" and "Treatment for extravasation" And the processes consist of "Action node" (6), "Thinking node" (6), "Choice node" (6),"Assessment item table" (6), and "Reference table" (4)

Discussion

Structural visualization of nursing care for extravasation clarified advanced thinking process which cannot be recognized at a glance what nurse does do prophylactically, what nurse observes for early detection, what decision nurse makes in case of extravasation and etc.

Further structuring of the thinking process is supposed to let the processes of intervention for minimize of extravasation and appropriate and immediate treatment shared among many nurses to provide more expert care to patient.

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