QUASI-EXPERIMENTAL STUDY

Nurse Handover with SBAR method: a quasi-experimental study.

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Findings:

Implementing a standardized handover framework such as the SBAR method allows for concise and comprehensive information handoffs and allows early interception of clinical instability.

Aknowledgment:

ABSTRACT

BACKGROUND:
Handover is a crucial aspect for patient safety and continuity of care. Many factors can affect the quality of the information transmitted and handover may be ineffective or even harmful if the information is incomplete or omitted.

AIM:
The primary objective of the study was to describe the changes in handover quality after introduction of the Situation, Background, Assestment and Raccomandation (SBAR) method.
Secondary objectives were to describe changes in the number of interruptions and changes in communication skills in nursing handover.

METHODS:
A quasi-experimental, monocentric study with pre/post test design was implemented in a sample of convenience.

RESULTS:
198 nurses participated in the study and 208 nursing handovers were analyzed. After the introduction of the SBAR method there has been a significant improvement in the quality of handovers, a reduction in the number of interruptions and an increase in communication skills.

CONCLUSION:
SBAR method demonstrably improves the quality of nursing handovers, reducing the number of interruptions and enhancing communication skills.
The introduction of the SBAR delivery method improves the quality and safety of information transmission.

Studio Quasi-sperimentale

Consegna Infermieristica con metodo SBAR:
uno studio quasi-sperimentale

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Riscontri:

L'implementazione di una metodologia standardizzata per il passaggio di consegne, come il metodo SBAR, consente di fornire informazioni concise e complete e di identificare precocemente l'instabilità clinica.

Ringraziamenti:

ABSTRACT

INTRODUZIONE:
Il passaggio delle consegne è un aspetto cruciale per la sicurezza del paziente e per la continuità delle cure. Molti fattori possono influenzare la qualità delle informazioni trasmesse rendendo il processo inefficace o addirittura dannoso se le informazioni sono incomplete o omesse.

OBIETTIVI:
L'obiettivo primario dello studio era descrivere i cambiamenti nella qualità della consegna infermieristica dopo l'introduzione del metodo Situation, Background, Assestment and Raccomandation (SBAR). Gli obiettivi secondari erano la descrizione dei cambiamenti nel numero di interruzioni e dei cambiamenti nelle abilità di comunicazione nell'handover infermieristico.

MATERIALI E METODI:
Uno studio quasi sperimentale, monocentrico con disegno pre/post test è stato implementato con un campionamento di convenienza.

RISULTATI:
198 infermieri hanno partecipato allo studio e sono stati analizzati 208 handover infermieristici.
Dopo l'introduzione del metodo SBAR c'è stato un miglioramento significativo della qualità dei passaggi di consegne, una riduzione del numero di interruzioni e un aumento delle capacità di comunicazione.

CONCLUSIONI:
Il metodo SBAR migliora la qualità delle consegne infermieristiche riducendo il numero di interruzioni e migliorando le capacità di comunicazione. L'introduzione del metodo di consegna SBAR contribuisce alla qualità ed alla sicurezza della trasmissione delle informazioni.

BACKGROUND

Nursing delivery in healthcare is recognized as an important factor in improving the safety of patients and the quality of care to ensure continuity of care (1).

Different types of nursing handover are described in the literature but the focus on content, clinical history and planning is higher during verbal delivery (2).

Verbal delivery has many positive aspects such as sharing information, continuity of care, protection of the person assisted, cooperative learning, development of collaboration within the group, support for team members and the expression of knowledge and experience with consequent continuous training among colleagues (1).

However, nurses handover may be ineffective or even harmful if the information is incomplete or omitted (3–7).

An effective nursing handover should be accurate, complete, timely, unambiguous and easily understood by the receiver (8–11).

Changing handover method is complicated and requires effective implementation strategies and training reinforcement (8,12).

The literature suggests the use of standardized nursing delivery models such as the SBAR model (5,7–9,13,14).

In 2007 the Joint Commission International (JCI) and the World Health Organization (WHO) suggested the implementation of a structured communicative delivery approach using the SBAR (Situation, Background, Assessment, Recommendation) technique as a precise and versatile handover tool (8,9).

SBAR model can be used in all clinical settings, especially in emergency settings, creating a structured language that increases the effectiveness, efficiency and accuracy of handovers and improves care outcomes (4,6,7,10,15–20).

The use of the SBAR method reduces the number of preventable adverse events and improves communication between team members without drawing out the time required for both written and verbal delivery and without reducing the time spent with the patient and his family (7,10).

The primary objective of the study is to describe the changes in handover quality after the introduction of the SBAR method in ASST in Lodi, Italy.

Secondary objectives of the study are to describe changes in the number of interruptions and changes in communication skills in nursing handover after the introduction of the SBAR method.

METHODS

A quasi-experimental monocentric pre/post test design study has been carried out.

A convenience sample of 198 nurses from eight Units of the ASST Lodi was identified from Internal Medicine Unit, Infectious Disease Unit, General Surgery, Specialist Surgery, Emergency Room, Intensive Care Unit, Pediatrics, Psychiatric Unit.

Inclusion and exclusion criteria

- **Inclusion**: nurses from the selected departments who have successfully completed the period of tutoring
- **Exclusion**: nurses who provide delivery not in their own ward.

The observations of the nursing handovers, before and after the implementation of the SBAR methodology, were carried out by specifically trained nursing evaluators using the Handoff Check tool validated in Italian language (13).

The Handoff check measures the quality of communications in delivery and consists of 6 survey items: context, level of interruptions, handover organization, communication skills, content, clinical judgement as problem solving skills and human/professional qualities.

The last two evaluation areas represent an overall judgement of the observation of the handover

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process and the level of agreement between evaluator and observed.

To avoid the Hawthorne effect, no information on the study objectives was provided to the nurses observed and the evaluators completed the Handoff check scale at the end of the observation.

Data analysis

For management of data of each domain of the Handoff check scale, position and dispersion measurements (Median, Range and Interquartile Range) have been obtained.

χ^2 test was calculated to highlight differences in the proportions between the two groups (pre and post test) based on the frequency of items evaluated as negative (values between 1 and 3 on the Likert scale) and positive (values between 4 and 9 on the Likert scale); a p-value < 0.05 was considered significant.

Ethical considerations

All participants agreed and gave their written informed consent. Since the study did not concern the patients, the convening of an Ethic Committee was not deemed necessary, in compliance with local regulation.

RESULTS

198 nurses participated in the study; 5 nurses had less than one year's experience, 21 from 1-2 years, 53 from 3-5 years, 119 from over 5 years.

In addition, 11 nurses had been working in the survey ward for less than one year, 56 for 1-2 years, 57 for 3-5 years, 74 for more than 5 years.

A total of 208 handover observation forms were completed; 104 completed in the pre-implementation phase and 104 in the post-implementation phase.

The median number of patients in the sample, considering all departments, was 14, IQR=[10;23], ranging from 2 (Emergency Room) to 42 (Internal Medicine Unit).

Given this variability, the median number of patients described in each delivery is 10, IQR [4;14], range [1;22].

The median duration of deliveries was 15 minutes, IQR [11;22], range [4;40]; this data is linked to the number of hand-over to deliver, which exponentially increases the time required (Figure 1).
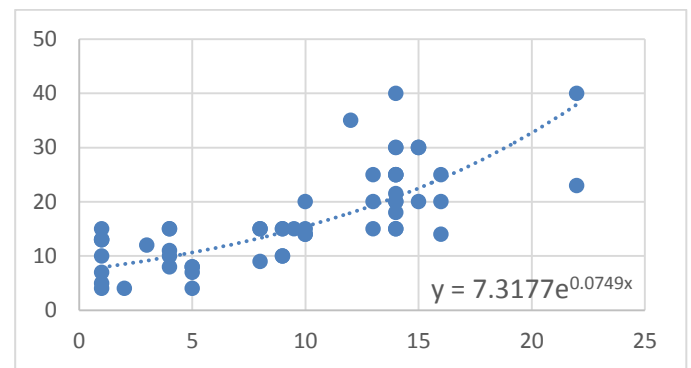

Figure 1 - Delivery time trend as a function of the number of patients

In the pre-implementation phase, 77 handovers were collected between the morning and afternoon shifts, 66 between afternoon and night, 65 between night and morning, while in the post-implementation phase, 77 deliveries were collected between the morning and afternoon shifts, 65 between afternoon and night, 66 between night and morning.

Pre-implementation data are summarized in Table 1 and show a partially homogeneous situation with lower scores in surgical wards. The item "context" is the one that shows the lowest scores among those investigated while very positive scores were recorded in Intensive Care Unit and Infectious Diseases Unit.

All the items evaluated in observation of the post-implementation delivery process, summarized in Table 2, show a clear improvement with pilot departments reaching values of 7-8 on the Likert scale.

The global assessment of the evaluator/observer on the handover delivered achieved very high scores with

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a good level of agreement with the nurses involved in the handover process.

In the surgical wards there was a clear improvement in all items investigated, mainly in the reduction of interruptions, organization of handovers and in the implementation of communication and clinical skills; there was also an improvement in the clinical information content.

In the Infectious Diseases Unit there was no improvement after implementation; in the Internal Medicine Unit there was a minor improvement in the containment of interruptions and in communication skills.

In the Pediatrics Unit, a fair improvement (on average one point on Likert scale) was found, equally distributed over all items investigated; a more significant improvement on all items investigated was shown in the Emergency Room (average of two points on Likert scale), with a clear improvement in the containment of interruptions in the handover process.

In the psychiatric unit the improvement in all the items evaluated was noted, except for the organization of the delivery, confirmed at optimal levels but with a slight deterioration in the control of interruptions in contrast to the other pilot wards.

The analysis of the handover content item showed a significant improvement in the pilot units; general surgery that started from insufficient values also showed a marked improvement.

The improvement of the items investigated in the pilot units shows a statistical significance in context, communication skills and human and professional qualities and is summarized in Table 3.

DISCUSSION

As per the existing literature (7,10), the results of this study confirm the potential of the SBAR system as an optimal handover tool.

Distractions caused by staff, sound of patient call systems and sounds of monitors have shown to negatively affect the reception of information in all nursing handovers.

These interruptions lead to lack of concentration and loss of up-to-date and complete information on the clinical course of the patient.

To resolve the issue, a professional not involved in handover was identified to answer patient call systems and telephone calls and to deal with interruptions by other professionals, patients and caregivers.

For surgical wards, it was agreed with the recovery room of the operating theatres that patients should not be discharged to the wards during the handover period.

The same system was implemented in the emergency room, asking the staff not to transfer new admissions during handovers.

As a result of the above measures, five of the eight pilot units have achieved significant results in terms of the effectiveness of the barrier systems, recording excellent post-implementation evaluations on the control of interruptions and disruptions in the handover process.

Psychiatry, where there is a modest worsening, goes against the trend.

The analysis of the results confirmed the effectiveness of the strategy to contain distractions (3,21).

In line with the current literature (10,16,20), a lack of adequate communication skills among nursing staff was also confirmed by the results of this study, particularly for specialist surgery and Emergency Room.

After appropriate training on communication processes, the results showed a significant improvement; two wards (specialist surgery and intensive care unit) reached the maximum result.

The results confirm the data in the literature on the need to adopt effective communication mechanisms and the need for expertise in giving, receiving, verifying information and making summaries

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(7,10,11,22). The overall evaluation of the handover and the degree of agreement between participants both show an improvement in the quality of information transmission after the implementation of the SBAR method.

CONCLUSION

Improving the communication process and reducing interruptions in nursing handover are a priority in terms of impact on the quality of care.

The introduction of the SBAR delivery method improves the safety of transmitted information by decreasing the number of interruptions and increasing nurses' specific skills in transmitting medical information.

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APPENDICES:

Table 1 - Evaluation item Handoff CEX pre-implementation of SBAR model

ITEM HANDOFF	GENERAL SURGERY		SPECIALIST SURGERY		INFECTIOUS DISEASE UNIT		INTERNAL MEDICINE UNIT		PAEDIATRICS		EMERGENCY ROOM		PSYCHIATRIC UNIT		INTENSIVE CARE UNIT	
	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range
CONTEXT	5	1-9	5	2-9	8	3-9	6	1-9	7	5-8	4	1-9	7.5	3-9	5	1-9
ORGANISATION	7	3-9	6	3-9	8	3-9	8	5-9	7	5-9	7	4-9	8	4-9	8	4-9
COMMUNICATION SKILLS	7	4-9	6	3-8	8	3-9	7.5	5-9	7	5-9	7	4-9	7	5-9	8	4-9
CONTENT	5	1-7	7	4-9	8	3-9	8	5-9	7	6-8	7	6-8	7	5-8	8	4-9
CLINICAL JUDGEMENT	7	2-9	7	3-9	8	6-9	8	5-9	7	5-9	7	4-9	7	5-9	8	5-9
HUMAN/PROFESSIONAL QUALITIES	7	3-9	6	2-9	8	3-9	8	6-9	7	6-8	7	3-9	7	5-9	8	6-9
GLOBAL JUDGEMENT	6.5	3-9	6	3-9	8	5-9	8	6-9	7	6-8	6.5	4-8	7	5-9	7.5	5-9
AGREEMENT	6	4-8	7	5-9	8	6-9	8	6-8	7	6-8	7	5-8	7	6-8	8	6-9

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Table 2 - Evaluation item Handoff CEX post-implementation of SBAR model

ITEM HANDOFF	GENERAL SURGERY		SPECIALIST SURGERY		INFECTIOUS DISEASE UNIT		INTERNAL MEDICINE UNIT		PAEDIATRICS		EMERGENCY ROOM		PSYCHIATRIC UNIT		INTENSIVE CARE UNIT	
	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range	Me[IQR]	Range
CONTEXT	7	4-9	9	8-9	8	5-9	6.5	5-9	8	7-9	9	8-9	7	6-9	9	9-9
ORGANISATION	8	5-9	9	9-9	8	5-9	8	5-9	8	8-9	9	8-9	8	7-9	9	9-9
COMMUNICATION SKILLS	8	6-9	9	8-9	8	7-9	8	6-9	8	7-9	9	8-9	8	7-9	9	9-9
CONTENT	7	5-8	8	8-9	8	7-9	8	5-9	8	7-9	9	8-9	8	8-9	9	9-9
CLINICAL JUDGEMENT	9	7-9	9	8-9	8	5-9	8	6-9	8	7-9	9	8-9	8	7-9	9	8-9
HUMAN/PROFESSIONAL QUALITIES	8	7-9	9	8-9	8	6-9	8	7-9	8	8-9	9	8-9	8	8-9	9	9-9
GLOBAL JUDGEMENT	8	7-9	9	9-9	8	7-9	8	7-9	8	8-9	9	8-9	8	8-9	9	9-9
AGREEMENT	8	7-9	9	9-9	8	8-9	8	7-9	8	8-9	9	8-9	8	8-9	9	9-9

Table 3 - Frequency distribution of positive and negative evaluations by individual item pre and post implementation

ITEM HANDOFF	CONTEXT			ORGANISATION			COMMUNICATION SKILLS			CONTENT			CLINICAL JUDGEMENT			HUMAN/PROFESSIONAL QUALITIES		
	NEG	POS	p-value	NEG	POS	p-value	NEG	POS	p-value	NEG	POS	p-value	NEG	POS	p-value	NEG	POS	p-value
PRE-IMPLEMENTATION	48	160	< 0.001	3	205	0.08	6	202	0.01	5	100	0.02	2	206	0.16	4	204	0.05
POST IMPLEMENTATION	0	208		0	208		0	208		0	105		0	208		0	205	

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