Non-verbal behaviour in nurse–elderly patient communication

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CARIS-VERHALLEN W.M.C.M., KERKSTRA A. & BENSING J.M. (1999) *Journal of Advanced Nursing* **29**(4), 808–818

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This study explores the occurrence of non-verbal communication in nurse–elderly patient interaction in two different care settings: home nursing and a home for the elderly. In a sample of 181 nursing encounters involving 47 nurses a study was made of videotaped nurse–patient communication. Six non-verbal behaviours were observed: patient-directed eyegaze, affirmative head nodding, smiling, forward leaning, affective touch and instrumental touch. With the exception of instrumental touch these non-verbal behaviours are important in establishing a good relationship with the patient. To study the relationship between non-verbal and verbal communication, verbal communication was observed using an adapted version of Roter's Interaction Analysis System, which distinguishes socio-emotional and task-related communication. Data were analysed in hierarchical linear models. The results demonstrated that nurses use mainly eyegaze, head nodding and smiling to establish a good relation with their patients. The use of affective touch is mainly attributable to nurses' personal style. Compared to nurses in the community, nurses in the home for the elderly more often display non-verbal behaviours such as patient-directed gaze and affective touch.

Keywords: nurse–patient interaction, elderly care, observation study

INTRODUCTION

People are social beings. Interacting with other people provides support, comfort, love and affection, which are needs we all have. There is no indication that these needs will diminish with age (Moore & Gilbert 1995). Yet, as people grow older, they experience several changes in life,

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which interfere with developing social contact. Because of declining physical function, a lower income and a decreasing social network, elderly people may have little social contact. For people depending on care, a situation may develop in which the elderly person is mainly reliant on nurses who deliver nursing care (Nesbitt-Blondis & Jackson 1978, Arnold & Boggs 1995, Staab & Hodges 1996). This means that, apart from the fact that nurses need good communication skills to assess the patients' needs and to provide care that is tailored to the individual, there is also a need for communication to create good interpersonal relationships in which there is room for socializing, affection and empathy. These communication aspects can be expressed verbally or non-verbally. However, most authors agree that non-verbal behaviour is an essential method to convey warmth, love and support (Bensing *et al.* 1995, Mehrabian 1981, Strecher 1983, Roter & Hall 1992). Mehrabian (1981) even states that non-verbal communication is the pre-eminent mode to build rapport with other people.

Non-verbal communication includes all forms of communication that do not involve the spoken word (Greene *et al.* 1994). Perception of non-verbal communication involves all the senses, including hearing used on the verbal level to detect vocal characteristics of the spoken word (Sundeen *et al.* 1989). Non-verbal communication becomes important when elderly people develop hearing problems that affect their verbal communication ability. Touch is increasingly important in visually impaired people. Most research into nurses' interaction with elderly patients is still directed towards verbal communication. When attention is paid to non-verbal behaviour, most of the time the study is confined to one non-verbal aspect such as, for instance, touch. As a part of a larger study of nurse–patient communication (Caris-Verhallen *et al.* 1997a, b), this paper investigates how nurses use a number of non-verbal behaviours in interaction with elderly people. The relationship of non-verbal to verbal communication was also studied.

The role of non-verbal communication in the nursing process

Human communication, especially face-to-face communication, is largely non-verbal. Gross (1990) stated that the non-verbal component of communication comprises 55–97% of the message communicated.

Non-verbal communication has different functions. Argyle (1972) contends that non-verbal communication:

- conveys interpersonal attitudes and emotional states;
- supports or contradicts the verbal communication; and
- functions as a substitute for language, if speech is impossible.

There are numerous aspects of non-verbal communication. In this study we are interested in non-verbal behaviour that is important for the establishment of the nurse–patient relationship. Heintzman *et al.* (1993) describe five non-verbal behaviours which were found to be essential in a person's attempt to build rapport with another person: eyegaze, affirmative head nodding, smiling, body positioning and touch.

Eyegaze behaviour
Eyegaze takes a special place in non-verbal communication. In western cultures, gaze is a positive value in communication between people: listeners are expected to look at the speaker, and speakers look at the listeners to check whether the information is understood (Collier 1985). Eibl-Eibesfeldt (1972, 1971) and Von Cranach (1971) consider eyegaze to be a signal for readiness to initiate interaction with others. Maintaining moderate to high levels of direct eye contact conveys a sense of interest in the person with whom one is communicating. Conversely, averting one's eyes while talking with someone can damage the rapport-building because it is interpreted as expressing disinterest, detachment and dislike (Heintzman *et al.* 1993). To express warmth and empathy the nurse needs to make eye contact with the patient. Apart from that, the amount of patient-directed gaze influences the patient's share of talking. Bensing *et al.* (1995) showed that the duration of the general practitioner's gaze was related to the duration of patient speaking time about psycho-social health problems. Moreover, eye contact at appropriate levels has been shown to contribute positively to another's perceptions of an individual's competence and credibility (Heintzman *et al.* 1993, Burgoon 1994).

Affirmative head nodding
Affirmative head nods do have an obvious social function. Schabracq (1987) distinguishes three functions in affirmative head nods: (1) regulation of the interaction, especially changing turns in speaking; (2) support of spoken language; and (3) comment upon the interaction concerning the rapport and the content of the communication. For instance, nodding to affirm what was said and nodding while listening, to convey interest (Anderson 1985, Mehrabian 1972). The nurse's head nods encourage the client to tell their story (Caris 1997) In addition, people who use affirmative head nods frequently are considered as more friendly and more concerned (Heintzman *et al.* 1993).

Smiling
Smiling may be one of the most important characteristics of a nurse who wishes to establish good rapport with patients (Schabracq 1987; Heintzman *et al.* 1993). Smiling is positively judged by other people and is considered as a sign of good humour, warmth and immediacy (Mehrabian 1972, Reece & Whitman 1962).

Body positioning

A person's body positioning may indicate if he is listening, attending and involved (Von Cranach 1971, Gross 1990). Leaning forward is a way of showing awareness and immediacy. During the interaction with another person it clearly suggests interest in that person (Heintzman *et al.* 1993, Schabracq 1987). Forward leaning is also a sign of attention (Rosenfeld 1978). In earlier research Reece & Whitman (1962) showed that leaning forward conveys warmth and friendliness. Forward leaning combined with smiling, eye contact and verbal attentiveness ('hm-hm') communicates an attitude of involvement. This behaviour stimulates the other person to continue talking (Reece & Whitman 1962, Caris 1997).

Touch

Touch is a very important aspect in building rapport and establishing a relationship. Touch has also the potential to convey affection, care and comfort (McCann & McKenna 1993, De Wever 1977). Following Watson (1975), in research into the effect of touch in the nurse–patient interaction touch is divided into two categories, 'instrumental touch' and 'affective' or 'expressive' touch. Instrumental touch is defined as deliberate physical contact necessary to perform a task, e.g. to dress a wound or to take a pulse. Expressive touch is relatively spontaneous and affective, and is not necessary for the completion of a task (Le May & Redfern 1987, Oliver & Redfern 1991, McCann & McKenna 1993). In nursing, the latter type of touch is used seldom compared with instrumental touch (Routasalo 1996, Le May & Redfern 1987, McCann & McKenna 1993). Moore & Gilbert (1995) showed that residents of a home for the elderly experienced more immediacy and affection from nurses who used expressive touch than from nurses who did not. Hollinger (1986) found a relationship between nurses' touch and the verbal responses of the hospitalized elderly during the nurse–patient interactions.

THE STUDY

Aim of the study and research questions

The aim of the current study was to investigate non-verbal communication in nursing care for the elderly.

The study used a descriptive design and has been carried out in the community and in a home for the elderly in The Netherlands. More specifically, three research questions guided this study:

1 To what extent do nurses display non-verbal communication, in particular eyegaze direction, affirmative head nodding, smiling, forward leaning and touch?

2 How are non-verbal behaviours related to the verbal communication of nurses?

3 Are the non-verbal behaviours related to the setting (home nursing vs. home for the elderly) and the type of care provided?

To answer these questions, observations were made of videotaped nurse–patient communication. Based on one of the functions of non-verbal behaviour, the support of verbal communication, it is expected that affective verbal communication and the affective non-verbal communication categories will be related to each other.

As the two care settings differ in character and their patients' age, gender and level of independence (Caris-Verhallen *et al.* 1997b), one could assume differences in nurses non-verbal behaviour. In the home for the elderly, the residents, although living in separate rooms, make up part of a ward on which nursing care continues throughout the day. Nurse–patient communication patterns reflect a daily routine in nursing (Nyström & Segesten 1996). Apart from communication related to the delivered care, there is more time for socializing than in the community where the elderly live independently and each nursing visit has an explicit start and finish.

Furthermore, there is some evidence that the relationship between nurse and elderly patient in institutional care is different from the nurse–patient relationship in home care. Some researchers describe this relationship in institutional care as strongly reciprocal, intimate and even mimicking a family bond (Sumaya-Smith 1995, Nyström & Segesten 1996). Based on this literature, one might expect that nurses would display a great deal of non-verbal behaviour, which is an essential mode for conveying affection, love and support (Strecher 1983, Mehrabian 1972). Although, in the community, nurse–patient relationships can be also very intimate and reciprocal, the major objective of a home visit in the community is to deliver nursing care. Earlier research into verbal behaviour in these settings (Caris-Verhallen *et al.* 1997b) showed that the interactions in home nursing are less familiar than in institutional care. This could be connected with a low level of non-verbal behaviour.

As regards the different types of nursing care, it is expected that nurses will display more non-verbal behaviour during psycho-social care than during personal hygiene and technical nursing care. Psycho-social care requires empathy and concern, which are conveyed particularly by non-verbal communication.

MATERIALS AND METHODS

Data collection

In order to meet the research objectives real nurse–patient interactions were videotaped, during the delivery of nursing care. Each encounter was videotaped entirely using a manned camera, focusing on the nurse and the

patient, except in the case of nursing activities where the patient was undressed. In such cases the video camera was focused on the nurse only, or when that was impossible only verbal communication was recorded. A few days prior to the data collection, nurses informed their patients about the research, and asked them to give informed written consent to participate. Very sick patients, patients suffering from dementia and terminally ill patients were excluded from participation. In the community very few patients refused consent. In the home for the elderly, half the 60 residents who were asked to participate agreed. Nurses did not systematically inform us about those patients who did not want to co-operate, but they reported that there was no clear difference between participant and non-participant residents.

Nurses

Forty-seven nurses of different grades took part in this study. The nurses were not a random sample, but nurses who were going to participate in a training in communication skills. Twenty-four nurses worked in an organization for home nursing and provided nursing care in the community. Twenty-three nurses provided care in a home for the elderly. Each nurse was followed during part of the day in which, on average, four encounters with patients were recorded. The two groups did not differ significantly with respect to age, gender, education and years of experience (see Table 1).

Patients

One hundred and nine patients agreed to participate in the study. Together they participated in 181 recorded nursing encounters. Eighty-one patients lived in the community; mean age 77·5 years. Most of the patients in the community

received nursing care for a long period (mean 37 months). Twenty-eight patients were residents in a home for the elderly. These patients were older than the patients in the community. Their mean age was 86·7 years. On average, they lived about 5·5 years in the home for the elderly.

These two groups of patients can be considered representative samples of the populations of patients in the community and in homes for the elderly, with regard to age and gender (CBS 1995, Delnoij *et al*. 1996). The two groups differed from each other in respect of age, gender and mean duration of nursing care received (see Table 2).

Observation scheme

The observation scheme is directed at non-verbal and verbal communication.

Table 2 Distribution of age, sex and duration of receiving nursing care of patients who took part in the study ($n = 109$)

Patients' characteristics	Patients in the community		Patients in the home for elderly	
	Mean	SD	Mean	SD
Gender				
Women	65%		89%	
Men	35%		11%	
Mean age	77·5	(8·7)**	86·7	(4·4)
Subjective health	2·0	(0·4)**	2·3	(0·4)
Mean duration of received				
Nursing care in months	37	(43·6)*	70	(77·2)

* Significance level of $P \leq 0.05$.
** Significance level of $P \leq 0.01$.

Table 1 Distribution of different characteristics of nurses participating in the study ($n = 47$)

Provider variables	Nurses in the community ($n = 24$)		Nurses in a home for the elderly ($n = 23$)	
	Mean	SD	Mean	SD
Gender[b]				
Women	100%		91%	
Men			9%	
Mean age[a]	37·4	(9·3)	40·9	(8·7)
Educational level[1b]				
Nurses	46%		35%	
Auxiliary nurses	54%		65%	
Years of employment[a]	16·5	(8·8)	15·9	(7·2)

[1] Nurses = Dutch higher professional education level, HBO or 3·5 years of in-service training.
Auxiliary nurses = Dutch secondary professional education level, MBO or 2·5 years of in-service training.
[a] Differences in age and amount of experience were tested by means of *t*-tests and were not significant.
[b] Differences in gender and education level were tested by means of a chi-square tests and were not significant.

Non-verbal communication

Non-verbal communication

The observation scheme contains six non-verbal categories: patient-directed gaze, affirmative head nods, smiling, forward leaning and instrumental and affective touch. In fact, instrumental touch does not play a role in building rapport, but because this kind of touch is inherent in nursing it has to be observed to distinguish it from affective touch.

- Patient-directed gaze is defined as the nurse looking at the face of the patient.
- Head nods are defined as nodding one or more times as a sign of attentiveness in conversation or as reinforcing the spoken word (Mehrabian 1972, Anderson 1985).
- Smiling in this context is defined as an utterance of friendliness. Laughing out loud, on the other hand, in response to a joke is not considered as non-verbal communication; it is coded in the verbal part of the observation scheme.
- Forward leaning is defined as posture which involves bending towards or sitting closer to the patient when this is not necessary to carry out the nursing tasks. This position conveys involvement and a concentrated focus on the interaction partner (Heintzman *et al.* 1993).
- Affective touch is relatively spontaneous and affective, and not necessary for the completion of a task (Le May & Redfern 1987). An example is a nurse who puts an arm around the shoulder of a distressed patient.
- Instrumental touch is deliberate physical contact, which is necessary in performing the nursing task. An example is touch while dressing a wound.

The duration of all six non-verbal categories was recorded. The type of nursing care was also coded, using Kerkstra & Vorst-Thijssen (1991), as a point of departure. We discerned three types of encounters: encounters dominated by personal hygiene care, encounters principally involving technical nursing procedures and encounters which were dominated by psycho-social care.

Verbal communication

In order to observe the verbal communication of the nurses, an adapted version of Roter's Interaction Analysis System (RIAS) was used (Roter 1989). Using this system all utterances in patient and nurse dialogue are coded in separate and non-overlapping scoring categories. RIAS discerns socio-emotional and instrumental communication. Within these two categories we defined in an earlier study five clusters, based on Correspondence Analysis (Caris-Verhallen *et al.* 1997b):

- Social communication, which provides information about the degree to which the nurse uses social conversation that has no particular function in nursing activities, such as personal statements, banter, jokes and small talk.

- Affective communication, which provides information about the extent to which the nurse shows verbal attentiveness, concern, empathy and sympathy with the patient.
- Communication that structures the encounter, involves utterances that indicate guidance and direction such as orientating and instructing, requests for clarification, asking for understanding and asking for opinion.
- Communication about nursing and health, which contains all items with respect to nursing, medical or therapeutic topics.
- Communication about lifestyle and feeling, which contains all verbal expressions with respect to lifestyle issues and emotional topics.

Reliability of the observations

The video recordings were observed systematically by two observers using the CAMERA computer system (Iec Pro-GAMMA 1994), which is especially designed for coding behavioural interactions from video recordings.

With respect to the non-verbal behaviours, both duration and frequencies of the variables were recorded. In this study duration was used. Ten of the contacts were coded by each of the two observers in order to calculate the inter-rater reliability of the non-verbal behaviours. Pearson's R proved to be between 0·70 and 0·98.

Cohen's Kappa was used to calculate the inter-observer reliability of the five verbal communication categories. This statistical procedure corrects for agreement based on chance and is particularly suitable for observations coded in exclusive categories (Hollenbeck 1978). A kappa coefficient can range from −1 to +1 and a value of ≥ 0·60 indicates an acceptable level of reliability (Cichetti 1984). Cohen's Kappa in our study varied between 0·74 and 0·81.

Following Henbest & Fehrsen (1992), who noted that scoring only a part of a consultation could be as reliable as scoring an entire consultation, preliminary observations with observation periods of 5 min, 10 min and the total length were carried out during 48 encounters. As 10-min observation periods proved to be very reliable compared with the observation of the total length (non-verbal communication between 0·61 and 0·92 and verbal communication between 0·80 and 0·93, Pearson's R), observation time was standardized and the first 10 min were observed of each of the 181 nursing encounters.

Analyses

In order to answer the first research question, we specify the amount of nurses' non-verbal communication during the nursing encounters. Proportional scores were used. The recorded time spans of 'eyegaze direction', 'forward leaning', 'affective touch' and 'instrumental touch' were

divided by the duration of time that nurse and patient were in sight. Similarly, the time span of 'head nodding' and 'smiling' were adjusted by dividing duration by the time that the nurse's face was in sight.

A problem occurred in answering the second and third research question relating to the nesting of the nursing encounters within the 47 nurses. This implies that the 181 encounters cannot be considered completely as independent observations. Because of each nurse's style of behaviour, it might be argued that the encounters of one nurse, on average, would be more alike than those of different nurses (Bensing *et al.* 1995). The amount of nesting is calculated by multilevel analysis and represented by an intra-class correlation coefficient (Prosser *et al.* 1991).

The second research question concerning how non-verbal behaviours were related to verbal communication was investigated using correlational techniques.

Lastly, additional analyses were carried out to investigate whether setting and type of nursing care affected nurse's non-verbal communication.

RESULTS

Non-verbal communication in nurse–patient interaction

It was only possible to observe non-verbal communication in 165 of the 181 nursing encounters. In 16 encounters nursing care consisted mainly of personal hygiene care, during which it was impossible to focus on the nurse while avoiding the undressed patient. In these cases only verbal communication was recorded.

Table 3 shows that in all 165 nursing encounters there is some patient-directed eyegaze, varying between 5% and 98% of the time, both nurse and patient were in sight. On average, in 41% of the observation time the nurse looks in the direction of the face of the patient. In nearly all encounters nurses smile and make head nods. In 58% of the nursing encounters nurses display forward leaning, expressing immediacy and interest behaviours. The mean

duration of this posture is nearly 3% of the observation time. In more than 40% of the nursing encounters, there is some kind of affective touch. This type of touch is shown in about 1·5% of the observation time. As is to be expected, the amount of affective touch is much lower than the amount of instrumental touch. The latter was displayed in three-quarters of the encounters, during 20% of the observation time. The standard deviations make clear that the amount of non-verbal behaviour in the encounters varied to a large extent.

As mentioned before, the scores of non-verbal behaviour might belong to a nurse's communication style and in that sense the encounters are not independent. Table 4 presents the intra class correlation coefficients for non-verbal and verbal nurses' behaviour. From the six non-verbal behaviours the highest coefficient is the affective touch

Table 4 Intra-class correlation coefficients of non-verbal and verbal communication, measured on the level of encounters

Nurse behaviour	Intra-class R
Non-verbal behaviour	
Patient-directed-eyegaze	0·20*
Affirmative head nodding	0·10
Smiling	0·00
Forward leaning	0·01
Affective touch	0·40***
Instrumental touch	0·07
Verbal behaviour	
Social communication	0·15
Affective communication	0·17*
Structuring communication	0·03
Communication nursing and medical topics	0·13
Communication lifestyle and emotional topics	0·01

The number of nurses is 47 and the number of encounters is 181.
***Significance level $P \leq 0.001$.
*Significance level $P \leq 0.05$.

Table 3 Overview of non-verbal communication categories during nursing encounters ($n = 165$)

Non-verbal categories	Number of encounters in which non-verbal behaviour is shown		Mean duration of non-verbal behaviour	Standard deviation
	Abs.	%	(%)	
Patient-directed-eyegaze	165	100	41·3	27·4
Affirmative head nodding	152	92	2·4	3·2
Smiling	141	85	1·5	1·8
Forward leaning	95	58	2·7	5·3
Affective touch	69	42	2·1	6·4
Instrumental touch	128	78	20·2	19·4

(0·40), meaning that 40% of the variance is explained by the nurse level, while the remaining 60% is due to variance between encounters. The intra-class coefficient of patient-directed gaze is 0·20, meaning that 20% of the variance is attributable to the nurse.

The variance in verbal communication is, with the exception of affective communication, due mainly to the variability in encounters.

Summarizing these results, we may say that the encounters within one nurse have a greater degree of similarity than encounters of different nurses, but only in a limited way. The similarity refers mainly to affective verbal communication and affective touch.

Relations between nurses' non-verbal communication and verbal communication

Table 5 shows a positive relationship between patient-directed eyegaze on one hand and the two verbal socio-emotional categories and talking about lifestyle and emotions on the other. Verbal behaviour that structures the encounter (such as 'asking for an opinion', 'asking for understanding' and 'orientating and instructional remarks') and conversation about nursing and health topics are both negatively related to nurses' eyegaze. It seems that nurses mainly display these types of verbal communication during encounters in which hygiene or technical nursing care is provided. This is confirmed by the negative correlations between instrumental touch on one hand and structuring communication and communication about nursing and health topics on the other hand. The latter are very common in technical and hygienic care.

Nurses' head nodding is positively related to affective communication and communication about lifestyle and emotions. Head nodding is negatively related to task related verbal communication.

Smiling is positively related to social communication. Nurses show these non-verbal behaviours less frequently when the encounter is instrumental in nature.

Finally, affective touch is related to affective verbal communication, meaning that as the nurse shows empathy and concern during encounters she also expresses this by touching the patient.

Difference in non-verbal behaviour between nurses in the community and in institutional care

As the standard deviations in Table 3 make clear the observations of the six non-verbal behaviours for each encounter were very different. Table 4 showed that the variance in these behaviours, except for affective touch, could hardly be attributed to nurses. In the next analysis we investigate whether non-verbal behaviours were related to the setting (community vs. home for the elderly) or the type of care. In a hierarchical linear model mean proportions of non-verbal communication are computed in settings and per setting in each type of nursing care, separately. The results are shown in Table 6.

The table shows that nurses in the home for the elderly look significantly more in the direction of the patient than nurses in the community (row 1, columns 1, 5). This counts especially for hygiene care (row 1, columns 2, 6) and technical nursing care (row 1, columns 3, 7). The proportion of eyegaze is largest during psycho-social care in both settings, namely 63% in home care and 73% in the home for the elderly. The difference between settings during this type of care is not statistically significant.

Nurses in the home for the elderly usually display more affective touch than their colleagues in home nursing (row 5, columns 1, 5). This is principally the case during psycho-social encounters (row 5, columns 4, 8).

Table 5 Overview correlations between verbal categories and non-verbal categories ($n = 165$ nursing encounters). Correlation coefficients are computed in hierarchical linear models (165 encounters nested within 47 nurses)

Non-verbal behaviour	Social communication	Affective communication	Communication that structures the encounter	Communication nursing and medical topics	Communication lifestyle and emotions
Patient-directed eyegaze	0·20*	0·25**	−0·54***	−0·30***	0·26**
Affirmative head nodding	0·08	0·31***	−0·40***	−0·25**	−0·21**
Smiling	0·19*	0·03	−0·22**	−0·21**	0·08
Forward leaning	−0·20*	0·10	0·10	0·10	0·05
Affective touch	−0·12	0·16*	−0·03	0·08	−0·03
Instrumental touch	−0·13	−0·12	0·38***	0·19*	−0·26***

*** Significance level of $P \leq 0.001$.

** Significance level of $P \leq 0.01$.

* Significance level of $P \leq 0.05$.

Table 6 Mean scores[1] of nurses' non-verbal behaviour, by setting and type of care. (n = 165 nursing encounters)

	Home nursing				Home for the elderly			
	1. In general (n = 73)	2. Hygienic care (n = 46)	3. Technical nursing care (n = 13)	4. Psycho social care (n = 14)	5. In general (n = 92)	6. Hygienic care (n = 69)	7. Technical nursing care (n = 8)	8. Psycho social care (n = 15)
1. Patient-directed eyegaze	35·5**	26·1***	27·1*	63·3	44·9	41·8	49·5	73·3
2. Affirmative head nodding	2·2	0·7***	1·9	5·2	2·9	2·5	3·8	5·0
3. Smiling	1·6	1·1	1·4*	2·6	1·7	1·4	3·1	1·8
4. Forward leaning	2·2	2·3	0·8*	2·7	3·1	2·9	4·5	2·6
5. Affective touch	1·1***	0·3	0·0	1·4**	2·2	2·6	2·8	6·3
6. Instrumental touch	22·5*	29·5**	23·8	7·9	18·2	19·6	21·8	2·7

[1] Means are calculated in hierarchical linear models. The number of nurses is 47 and the number of encounters, in which non-verbal behaviour is measured, is 165.
*** Significance level of $P \leq 0.001$.
** Significance level of $P \leq 0.01$.
* Significance level of $P \leq 0.05$.

The amount of instrumental touch is shown significantly more often by nurses in the community (row 6, columns 1, 5). This is mainly attributable to instrumental touch during hygienic care.

In general there is no difference between nurses in the two settings concerning affirmative head nodding, smiling and forward leaning. However, comparing the amount of head nodding during the different types of care we see that nurses in the home for the elderly nod significantly more during hygiene care (row 2, columns 2, 6). With regard to smiling and forward leaning (rows 3, 4), significant effects are found from the type of nursing care that is provided. Especially during technical nursing care, nurses in the home for the elderly use these types of non-verbal behaviour more often.

DISCUSSION

In this study, we have paid attention to non-verbal communication of nurses such as patient-directed eyegaze, head nodding, smiling, forward leaning and touch.

In describing nurses' non-verbal behaviour we found that patient-directed eyegaze was observed during all nursing encounters. On average, nurses look in the direction of the face of the patient 40% of the time. This result is consistent with findings from other studies, in which the amount of gaze ranges from 30% to 70%. (Vrugt 1983, Argyle 1988). Affirmative head nods and smiles were shown frequently although it is remarkable, however, that in 15% of the encounters nurses do not smile at all, even though smiling is especially a means of non-verbal communication through which warmth, openness and sympathy are conveyed (Heintzman *et al.* 1993, Argyle 1988).

As is the case in other studies into the use of touch in nursing (Le May & Redfern 1987, Oliver & Redfern 1991, McCann & McKenna 1993, Routasalo 1996) nurses appeared to use instrumental touch more frequently than affective touch. The amount of affective touch appeared, to a large extent, to belong to a nurse's communication style. This counts for less than smiling. Other non-verbal behaviours were mainly attributable to the encounter.

In accordance with our expectations it appeared that non-verbal and verbal communication were related to each other, meaning that task-related communication (structuring communication and communication about nursing and health topics) was positively related to instrumental touch and negatively related to non-verbal communication that was affective in nature (gaze, head nodding and smiling). On the other hand, affective communication and communication about lifestyle and emotions were positively related to gaze and head nodding, but negatively related to instrumental touch.

Furthermore the results show that, consistent with our expectations concerning the difference between these two care settings, nurses in a home for the elderly show

non-verbal behaviour more often. These findings were not attributable to the differences between patient populations in the two care settings, such as age, gender, perceived health or length of time the nurse has cared for the patient. An earlier study (Caris-Verhallen *et al.* 1997b) showed that those patient characteristics were hardly related to the way nurses communicate with their patients.

The more frequent occurrence of non-verbal behaviour may reflect the familiar atmosphere in the home for the elderly. Based on the literature described earlier in this paper one could expect that, compared with nurses in the community, nurses in the home for the elderly more often displayed non-verbal behaviours, because apart from hygiene and technical nursing goals they also paid a great deal of attention to familiar contact and socializing. The latter are connected with non-verbal behaviour, especially with affective touch.

Expectations with respect to the type of care were partly confirmed. Nurses in home care show more non-verbal behaviour to build rapport during psycho-social care than during hygiene and technical nursing care, but nurses in the home for the elderly showed some exceptions. They smiled and leant forward more frequently during technical and hygiene care. As was to be expected, we see that instrumental touch is predominantly affected by the type of nursing care. This is not surprising, because instrumental touch is inherent in hygiene or technical nursing care, while this is not so usual in encounters which are dominated by psycho-social care.

Methodological issues

Some methodological points need special attention. First, in investigating the relationship between verbal and non-verbal communication we used a correlational design. In interpreting these results we must keep in mind that this provides us with associations; however, we cannot make causal explanations. This is a limitation, because it is plausible to suggest some kind of causality. For instance, as the nurse displays a great deal of non-verbal behaviour, patients may raise socio-emotional topics, but the opposite is equally possible: the topics that are raised can influence nurses' non-verbal communication. With the techniques used, no such conclusions can be made. Analyses of behavioural sequences are recommended in looking at causality.

Nevertheless, with the techniques used it was possible to determine that all findings pointed in the same direction. In particular, encounters which were characterized by instrumental verbal communication were negatively related to non-verbal behaviour that was affective in nature, but a positive relationship was found with instrumental touch. These findings indicate convergent validity of the used instruments.

Another issue, however, is conceptual validity. Non-verbal behaviour is more complex than described in this paper. For instance, some of the non-verbal communication categories are multi-interpretable. Also, combining some non-verbal behaviours can lead to another interpretation. Combined forward leaning and eyegaze direction can indicate paying attention but this combination can also indicate dominance (Heintzman *et al.* 1993). Smiling can convey friendliness but also cynicism or arrogance. In this study forward leaning and affective touch is considered as conveying warmth and kindness, but a patient may also perceive these behaviours as intrusive or degrading, and consequently as annoying.

To observe behaviour in a more specific and valid way, one should have close-ups of faces. Therefore one has to use more than one video camera and record from different angles. These types of study are not possible in nursing practice, but restricted to experimental arrangements. In analysing verbal behaviour and the atmosphere during the encounter, nurses rarely showed hostility or disagreement with their patients (Caris-Verhallen *et al.* 1997b). Therefore patient-directed gaze, smiling, head nodding, forward leaning and affective touch were considered as positive.

Finally, there were some practical issues. The nurses participating were not a random sample, but nurses who were going to receive training in communication skills. Because patients were recruited by the nurses themselves in the patient group, some selectivity could also have been present. This could provide a limited bias in the data and accordingly conclusions about nurse–elderly patient communication in general should be drawn with caution.

Moreover, there is some concern as to whether nurses may have been the subject of performance bias (Levinson & Roter 1993), meaning that nurses, being aware of being videotaped, possibly behaved differently. We think that this type of bias was limited. The videotaping continued for half a day and the literature confirms that people concerned tend to resume their natural behaviour in a fairly short time (Verhaak 1988, Schepers 1991). Apart from that, most of the nurses and patients reported afterwards in a questionnaire that the videotaped encounter was comparable to the normal situation (Caris-Verhallen *et al.* 1997b).

Directions for future research

Despite the restrictions described above the technique of recording behaviour in real nursing encounters has high face validity, and observation was found to be reliable. However, this research was only a beginning to describe a comprehensive topic on which much research remains to be done. First, future research should do justice to the interactive nature of communication and take both nurse and patient into account. Secondly, verbal and non-verbal communication are both critical aspects of any behavioural

interaction. Accordingly it could be important to examine the effects of verbal communication on non-verbal behaviour and vice versa, in both interaction participants. A method for this is lag sequential analysis, a method developed by Sackett (1977), in which contingency patterns among interacting individuals are identified.

Another topic that is imperative for future research is measuring patient outcome. There is evidence from studies into physician–patient interaction that doctors' non-verbal behaviour is correlated significantly with patient outcomes such as satisfaction and understanding (Caris-Verhallen *et al.* 1997a). It would therefore be of interest to investigate patients' opinions about the communication during the nursing encounter.

Acknowledgements

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