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NON-VERBAL BEHAVIOUR IN SAME-SEX AND MIXED-SEX PHYSIOTHERAPIST-PATIENT INTERACTIONS[1]

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Six male and six female physiotherapists were videotaped while treating male and female patients. The average duration of the therapist's gaze, smiling, touch, and speech, as well as the ratio of therapist's to patient's speech, were computed. It was found that these non-verbal behaviours differed as a function of sex of physiotherapist, sex of patient and point in the interaction. It was suggested that physiotherapists should increase their awareness of these behaviours in their interactions with patients.

In recent years researchers have shown a great deal of interest in the study of the non-verbal behaviour which occurs in face-to-face interaction, and the role this behaviour plays in the communication process. Some workers (e.g., Mehrabian, 1972) have suggested that non-verbal behaviour accounts for the major part of the communication which takes place between humans. In the last few years, several textbooks intended for health professionals in training (for example, Blondis and Jackson, 1977; Purtilo, 1973) have described the important role that gestures, facial expressions, gaze, touch and distance play in the relationship between patient and therapist. In spite of this, very few studies have examined the non-verbal behaviour which actually occurs in patient-therapist interaction. Indeed, an exploratory observational study by Perry (1975) represents almost the only empirical research on the non-verbal communication between physiotherapists and their patients. The present study was undertaken to provide further information about non-verbal communication between the therapist and patient.

As Argyle (1975) has pointed out, one function of non-verbal behaviour is to transmit information about the relationship between people who are interacting. Two aspects of this relationship which have received attention are affiliation and dominance. Mehrabian (1972) in a number of studies, has isolated several cues and indicating an affiliative, or friendly, interaction, including high amounts of gaze, speech, head nods, gestures and pleasant facial expressions such as smiling. High incidence of touch has also been related to affiliative interactions (Jourard, 1966; Montagu, 1971). Similarly, other research has pointed to an unsmiling expression (Mehrabian, 1972; van Hooff, 1972), avoidance of eye contact, or continuous staring (Exline, 1971), and an increased amount of speech by one partner relative to the other (Goldman-Eisler, 1968) as dominance cues. In the clinical setting, physiotherapists probably use both dominance and affiliative cues, since they are expected to be dominant and yet to maintain a friendly relationship with the patient.

The sex of the physiotherapist and the patient may also be an important determiner of the dominance and affiliation relations between them. In our culture, women are commonly viewed as friendly, sensitive, and submissive, while men are seen as unemotional, assertive, and dominant (e.g., Broverman, Broverman, Clarkson, Rosenkrantz and Vogel, 1970). Studies of sex differences in non-verbal behaviour have shown that women tend to give and receive more gaze, perhaps in order

to signal greater affiliation, and that conversations between two men show lower levels of eye contact (see review by Argyle and Cook, 1976). Similarly, compared to men, women have been shown to receive more smiles from others (Rosenthal, 1966). In addition, Henley (1970) found that women touched and were touched more than men. A study by Beekman (1975), however, indicated that male-male conversations were characterised by long bursts of speech, and that the amount that males spoke was related to their self-descriptions of aggressiveness and dominance.

Thus, it appears that the non-verbal behaviour of physiotherapists is likely to be influenced by both their sex role and their professional role. In some cases, these two roles may come into conflict, especially since physiotherapy is a female-dominated profession which often demands behaviour normally stereotyped as masculine. It is of interest, therefore, to determine how non-verbal cues of dominance and affiliation are related to the sex of the physiotherapist and the patient. The present study was an attempt to begin this investigation. It was hypothesized first that male and female physiotherapists differ in the amount of gaze, smiling, touch and speech they use in interactions with patients. In addition, it was hypothesized that male and female patients receive different amounts of these behaviours, and that therapists use different amounts of non-verbal behaviour with same-sex and opposite-sex patients.

Finally, several studies have found different patterns of non-verbal behaviour as a function of the task in which interactants are engaged (Mehrabian and Ksionzky, 1972) and the point in the interaction (Gallois and Markel, 1975; Knapp, Hart, Friedrich and Schulman, 1973). The present study compared physiotherapists' non-verbal behaviour at a point near the beginning of a treatment session with a point near the end of their interaction with the patient.

METHOD

Subjects

Fifty physiotherapists were initially contacted and asked to participate in the study. The first six male and six female therapists who were willing to participate and could provide suitable patients were videotaped. The therapists were all working in the general or orthopaedic area and were either in private practice or employed in a community health centre. All subjects were native speakers of English. The male therapists had graduated from 3 to 40 years previously (mean = 16.3 years); the females, from 3 to 20 years previously (mean = 10.8 years).

Apparatus

Physiotherapists were videotaped using a Sony Portapak videotape recorder and camera (models AV3420CE and AVC3450CE) with a Sony tripod. The videotapes were viewed using a Sony videotape recorder and a television monitor. Non-verbal behaviour was tracked using a frequency counter (Lafayette model 5822) and cumulative stopclock (Lafayette model 58007), activated by a push-button lever (Lafayette model 58026).

Procedure

The physiotherapists were first contacted by letter and invited to participate in the project. This letter asked the therapist to allow the investigators to videotape the second treatment session of one male and one female patient with knee pathology. The patients were to be Australians and native speakers of English aged between 20 and 50 years. A follow-up telephone call was made to ascertain willingness to participate. When the physiotherapist had a suitable patient, he or she telephoned a specified member of the research group, who then arranged for two members of the group, both female, to make the videotape at the physiotherapist's practice.

Before making the videotape it was restated to the physiotherapist that the study involved patient reaction to, and description of, the knee condition. The patient was told that the study was concerned with the physiotherapy management of knee conditions, and the physiotherapist was made aware of this explanation to the patient. One of the investigators operated the videotape camera. The equipment was positioned so as to tape the interaction between the physiotherapist and patient from behind the patient's shoulder, ensuring that the therapist was in full view.

Three of the six male therapists were videotaped first with male patients, and two of the female therapists saw male patients first.

Data Reduction

Two 45-second segments were selected for analysis: an early segment (the 45 seconds nearest the beginning of the interaction which were suitable for analysis; i.e., which were technically recorded satisfactorily), and a late segment (the 45 seconds nearest the end that were suitable). An investigator recorded the frequency and duration of each of the following non-verbal behaviours: physiotherapist's gaze (defined as therapist's eyes looking in the direction of the patient's face), physiotherapist's touch (either of the therapist's hands touching any part of the patient's body), physiotherapist's smiling (the corners of the

therapist's lips turned upward in a smile), physiotherapist's speech (any vocal sound emitted by the therapist), and patient's speech. The investigator depressed the push-button lever when the behaviour being recorded began and released it when the behaviour ended, activating both the stopclock and the frequency counter. Thus, the total frequency and duration of the non-verbal behaviour in each segment were recorded.

For 40 per cent of the segments, another investigator repeated the monitoring process described above to determine the reliability of the procedure. Inter-investigator reliability coefficients for the frequency and duration of all of the non-verbal behaviours studied ranged between .91 and .98, indicating that the procedure was reliable.

The average duration (duration divided by frequency) of physiotherapist's gaze, touch, smile, and speech was computed. This measure is related to the overall amount of non-verbal behaviour, but makes use of both frequency and duration; it is a measure of the average length of each occurrence of the behaviour. In addition, the therapist-to-patient speech ratio (duration of physiotherapist's speech divided by duration of patient's speech) in each segment was computed.

RESULTS

Each of the five measures was analysed by means of a 2x2x2 factorial analysis of variance with one between-subjects variable (sex of therapist) and two repeated measures (sex of patient and early vs. late segment). Results are presented separately for each non-verbal behaviour.

Gaze: Results of the analysis of variance for average duration of physiotherapist's gaze indicated a significant interaction between sex of patient and segment ($F = 6.81$; $df = 1,10$; $\rho < .05$). As can be seen from Table 1, physiotherapists of both sexes gazed longer at male patients in the late segment than in the early one. Female patients, however, received longer glances in the early segment than in the late one.

The hypothesized interaction between sex of therapist and sex of patient did not quite reach statistical significance at the pre-selected $\rho < .05$ level ($F = 3.81$; $df = 1,10$; $\rho < .08$). Inspection of the means presented in Table 1, however, suggests that the therapists gazed at patients longer when the therapist and patient were of opposite sexes than when they were the same sex.

TABLE 1: MEAN AVERAGE DURATION (IN SECONDS) OF PHYSIOTHERAPIST'S GAZE TOWARD MALE AND FEMALE PATIENTS AND IN EARLY AND LATE SEGMENTS.

	Sex of patient	
	Male	Female
Sex of physiotherapist		
Male	1.8[a]	3.4
Female	3.6	2.2
Segment		
Early	2.4[b]	3.8
Late	3.0	1.8

[a] The top four means are averaged across segment.

[b] The bottom four means are averaged across sex of physiotherapist.

Touch: Results for average duration of physiotherapist's touch indicated a significant interaction between sex of therapist and segment ($F = 5.89$; $df = 1,10$; $\rho < .05$). In this case, as Table 2 shows, male therapists touched their patients for longer periods in the late segment than in the early segment. Female therapists, on the other hand, touched their patients for longer periods in the early segment than in the late one.

TABLE 2: MEAN AVERAGE DURATION (IN SECONDS) OF PHYSIOTHERAPIST'S TOUCH IN THE EARLY AND LATE SEGMENTS.

	Segment	
	Early	Late
Sex of physiotherapist		
Male	4.2[a]	10.8
Female	14.5	6.6

[a] These means are averaged across sex of patient.

The results did not indicate any significant differences for touch involving sex of patient.

Smiling: Results of the analysis of variance for average duration of therapist's smiling did not indicate any significant differences involving sex of therapist, sex of patient, or segment.

Because smiling by the therapist seemed to be a relatively uncommon behaviour, the segments in which at least one smile occurred were counted. Smiles occurred in 10 of the 24 segments (41.7%) where the therapist was male. For female therapists, however, smiles occurred in 17 of the 24 segments (70.8%). Although this finding could not be analysed statistically, it did suggest that the female therapists were more likely to smile than were the male therapists.

Speech: Results of the analysis of variance for average duration of physiotherapist's speech

indicated a significant interaction between sex of therapist and sex of patient ($F = 5.60$; $df = 1,10$; $\rho < .05$). As can be seen from Table 3, female therapists showed a longer average duration of speech with male than with female patients, while male therapists spoke for the same average duration with patients of both sexes.

TABLE 3: MEAN AVERAGE DURATION (IN SECONDS) OF PHYSIOTHERAPIST'S SPEECH WITH MALE AND FEMALE PATIENTS.

	Sex of patient	
	Male	Female
Sex of physiotherapist		
Male	1.0[a]	1.0
Female	1.3	1.0

[a] These means are averaged across segment.

In addition, the results indicated a main effect for segment ($F = 6.22$; $df = 1,10$; $\rho < .05$): therapists of both sexes spoke to their patients longer in the late segment (mean = 1.2 seconds) than in the early segment (mean = 1.0 seconds).

Finally, a main effect for segment was obtained for therapist-to-patient speech ratio ($F = 14.22$; df 1,10; $\rho < .01$). In this case, therapists spoke for longer periods, relative to their patients, in the late segment (mean therapist-to-patient ratio = 5.1:1) than they did in the early segment (mean ratio = 1.6:1).

DISCUSSION

The results of the present study showed that, as hypothesized, the non-verbal behaviour of physiotherapists interacting with patients varies as a function of the therapist's sex, the patient's sex and the point in the interaction.

Taken in the light of previous research, the results indicate that the female therapists engaged in more affiliative non-verbal behaviour than did the male therapists, and the female patients received more affiliative cues. Female therapists touched their patients for longer periods in the early segment. As this usually involved greeting, general conversation, and questions about the patient's condition, the therapists may have done this to put their patients at ease. Male therapists, on the other hand, touched their patients for longer periods during the more task-oriented activities, such as treatment procedures and explanation of exercises, which occurred in the late segment. It is not unreasonable to conclude, therefore, that much of their touching was directly related to treatment. In addition, female therapists were more likely to smile than were male therapists, although smiling was not a common behaviour for therapists of either sex. Similarly, in the early segment, during the more social part of the session, female patients were gazed at for longer periods while male patients received more gaze in the more task-oriented late segment. Even though there is no necessary connection between task-oriented gaze and dominance (as opposed to affiliation), Exline (1971) found that in certain contexts long gazes (i.e., staring) were linked to dominance. The dominant behaviours in the physiotherapist's role are most salient during treatment, so that it is plausible to speculate that the therapist's gaze in the late segment was a signal of dominance rather than affiliation. In any case, the results point to a different use of gaze by physiotherapists when they are treating male and female patients. Finally, the results, though not statistically significant, suggested that patients received longer glances from therapists of the opposite sex, a finding which supports earlier research indicating that mixed-sex interactions involve more affiliative behaviour (see Argyle, 1975).

Female therapists appeared to give more non-verbal affiliative cues to their patients. At the same time, male therapists did not appear more dominant than females. Indeed, the results indicated that female physiotherapists spoke in longer bursts to their male patients than to their female patients, a difference which did not appear when the therapist was male. These long bursts of speech have previously been associated with dominance (Beekman, 1975). Female therapists may have used them with male patients in order to reinforce their dominant occupational role when, because of their sex, they might be expected to behave submissively to a male. Therapists of both sexes increased their average duration of speech in the late segment. Results indicated, in fact, that therapists spoke, on average, five times as much as patients in the later part of the interaction. It is true that physiotherapists must convey a great deal of information to their patients towards the end of a treatment session. Nonetheless, these results point to a one-sided interaction in which the patient may have been speaking in one-word sentences like "yes" and "no". Future studies should investigate the effect on patients of this highly dominant behaviour by therapists during the last moments of a treatment session.

Finally, the point in the interaction emerged as an important determiner of the non-verbal behaviour engaged in by the therapists. The more conversational part of the interaction (the early segment) involved more affiliative behaviours, especially when either the therapist or the patient was female. The more task-oriented late segment, on the other hand,

involved less affiliative behaviour and more non-verbal signals of dominance, at least as regards the amount of speech. The physiotherapists seemed to make a clear separation, in terms of their non-verbal behaviour, among the various tasks they engaged in with patients. Again, further research should investigate the relationship between this behaviour and effective patient care.

Studies on the relationship, in a medical setting, between therapist non-verbal behaviour, success of treatment, and patient satisfaction with treatment, are rare. What research there is, however, indicates that affiliative behaviours such as touch and a concerned tone of voice lead to more successful treatment than do more dominant behaviours (Agulera, 1967; Milmoe, Rosenthal, Blane, Chafetz and Wolf, 1967). In addition, combinations of affiliative verbal and non-verbal behaviour have been related to client ratings of greater empathy and genuineness in psychotherapy (Tepper and Haase, 1978). It should be stressed, however, that affiliation and dominance are not incompatible dimensions, and the present findings indicate that both male and female therapists made use of both kinds of cues. More research directly related to physiotherapist-patient interaction is needed. Even now, however, physiotherapists need to be aware, not only of the non-verbal messages the patient is sending, but also, perhaps even more importantly, of the non-verbal cues they transmit to the patient, and how these cues are interpreted.

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