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The effect of a practitioner's touch on a patient's medication compliance

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Although the positive effect of touch on compliance has been widely found in the literature, a new evaluation has been carried out in a health setting. Four general practitioners were instructed to slightly touch (or not) their adult patients who suffered from a pharyngitis when they asked them for a verbal promise to take the prescribed antibiotic medication. One week later, patients were solicited at home to evaluate the number of tablets that were taken. Greater medication compliance was found in the touch condition.

Keywords: tactile contact; medication; compliance

Introduction

The problem of patient noncompliance with recommended medical regimens has been highly documented (Fincham, 2007; Laude & Tabuteau, 2007; Palazoolo & Olié, 2004; Reach, 2007). This noncompliance is generally associated with wasted time for practitioners, a negative effect on patients' health, an increase in the number of relapses and, therefore, an increase in health-care costs. Thus, it will be interesting to explore and to promote techniques that facilitate patient compliance to prescribed medication (Shea, 2006). This study explores the effect of a practitioner's 'tactile contact' on a patient's compliance.

A multitude of research has demonstrated that touch was positively associated with compliance. People receiving a request for a dime accepted the request more favorably when slightly touched on the forearm during the solicitation (Kleinke, 1977). When touched by a confederate, passersby in a street agreed more favorably to look after a large and very excited dog for 10 minutes because the confederate wanted to go into a pharmacy where animals were prohibited (Guéguen & Fischer-Lokou, 2002). The probability of agreeing to participate in a street-survey increased when the solicitor made brief tactile contact with the subject when presenting the request (Guéguen, 2002; Hornik, 1987; Paulsell & Goldman, 1984).

The effect of touch on individual health behavior can be found in social psychology literature. Eaton, Mitchell-Bonair, and Friedman (1986) have evaluated the effect of a gentle touch during eating on nutritional intake of institutionalized chronic organic brain syndrome (COBS) patients. They found that touch was associated with an increase in calories (+29%) and protein (+36%) intake.

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Tactile contact is also associated with greater comfort of the patient. Pattison (1973) found that clients, who were touched, engaged in more self exploration than clients who were not touched. Bacorn and Dixon (1984) found that a counselor's touch in a first interview with a client was associated with greater compliance for a second interview. In the same way, Hollinger (1986) found that geriatric patients who were slightly touched by the nurse during nurse-patient interaction that lasted 15 min expressed more verbal interaction than patients who were not touched.

Given all of these studies, it seems that touch could be used with success in a medical context to obtain more efficiency in the medical recommendation addressed by the practitioner to his/her patient.

Method

Participants

The participants were 126 patients (53 men and 72 women) aged between 20 and 30 ($M = 24.2$, $SD = 3.98$) who consulted their family doctor, and for whom pharyngitis associated with a bacterial infection was diagnosed by the practitioner. The experiment was carried out from November 2007 to the end of January 2008. Thirty-three patients were excluded from the analysis because they were not at home when the interviewer came to evaluate the patient's medication consumption. Three other patients were excluded because it was impossible for them to give information about their medication consumption.

Procedure

Four general practitioners (two men and two women) who were volunteers to participate in the study acted as confederates in our experiment. They were instructed to select patients as participants according to the fact that (1) the age of the patient was between 20 to 30; (2) the patient had a pharyngitis caused by a bacterial infection (one case among four patients); (3) penicillin was the medication prescribed for the patient; (4) the medication consisted of the same product packaged in the same way (a box containing 16 tablets); and (5) the patient was instructed to take two tablets per day (one during breakfast and the other during dinner) for 7 days. We selected patients from 20 to 30, given the fact that, in France, a recent survey (Laude & Tabuteau, 2007) showed that the rate of patients who failed to follow the medication recommendation was higher in this age interval (20 to 30) than in any other age interval. The practitioners were instructed to act as usual with their patients and to solicit information about their age only at the end of the consultation when the practitioner wrote his/her prescription. After that, the practitioner stood up and accompanied the patient to the door of the medical office used for patients to exit. In both experimental conditions, the practitioner was instructed to gaze at the patient and to say 'It's very important that you respect you medication to prevent recurrence'. In the experimental condition, when saying that, the practitioner slightly touched the patient's forearm for 1–2 s, whereas no tactile contact was performed in the non touch control condition. The two experimental conditions were selected according to a random distribution with the help of a previously printed list and consulted by the practitioner one second before he/she stood up at the end of the consultation. The practitioner waited until the patient began to leave, closed

the door, returned to his/her desk and noted the experimental condition used for the patient on a form. Exactly 8 days later, the patients were solicited at home in face to face interaction by 10 interviewers (four women and six men). The interviewer was unaware of the experimental condition manipulated by the practitioner for each patient. Each interviewer was instructed to say 'A week ago you consulted Dr. X (name of the practitioner) for pharyngitis caused by a bacterial infection. An antibiotic was prescribed by Doctor X. Would it be possible to look at the box to see how many tablets are left?' All the patients agreed with the request and all of them invited the interviewer to enter their homes. All, except three, were able to find the medication box and give it to the interviewer. The interviewer was instructed to note the number of tablets that remained in the box. Then, the patient was thanked and a complete debriefing was done.

Results

In this experiment, a full-compliant patient was a patient who had consumed 14 of the tablets before being solicited at home. Given the fact that only four patients (one male and two females in the touch condition and one female in the non touch condition) were fully compliant, it was not possible to use the compliance rate as the dependant variable. Thus, we used the number of tablets that still remained in the box as the dependant variable. Data are presented in Table 1 according to patient gender and experimental conditions.

As no differences were found according to the four practitioners, data were collapsed. A 2 (experimental condition) \times 2 (patient gender) Anova was performed with the data. We found a main effect of the experimental condition ($F(1, 86) = 12.38, p < .001, \eta^2 = 0.13$) arguing that the number of tablets took by the patients was higher in the touch condition than in the non touch condition. Patient gender was found to have a major effect ($F(1, 86) = 5.53, p = 0.02, \eta^2 = 0.06$), attesting that female patients observed the medication recommendation more favorably than male patients. However, no interaction effect was found between experimental condition and patient gender ($F(1, 86) = 0.7, ns, \eta^2 = 0.00$).

Discussion

Our hypothesis was supported by the results. In this experiment, it was found that a practitioner's tactile contact associated with a verbal recommendation to respect medication was associated with greater compliance with this recommendation than when no tactile contact was performed. Overall, we found higher medication compliance with female patients than male patients. These results are congruent with previous evaluations carried out in France (Laude & Tabuteau, 2007).

Table 1. Mean (SD in brackets) of tablets that still remained in the box according to gender and experimental conditions.

| | Touch | No touch | Total |
|-----------------|-----------------------|-----------------------|-----------------------|
| Male patients | 4.35 (1.35), $N = 20$ | 5.44 (1.92), $N = 18$ | 4.87 (1.71), $N = 38$ |
| Female patients | 3.79 (0.88), $N = 24$ | 4.68 (1.12), $N = 28$ | 4.27 (1.10), $N = 52$ |
| Total | 4.05 (1.14), $N = 44$ | 4.97 (1.51), $N = 46$ | 4.52 (1.41), $N = 90$ |

To our knowledge, this is the first time that the effect of touch on medical recommendations has been noted. Previous research that explored the effect of touch on compliance to a request found that tactile contact was associated with greater compliance to pro-social requests such as giving someone a dime (Kleinke, 1977) or participating in a survey (Guéguen, 2002; Hornik, 1987; Paulsell & Goldman, 1984). However, in this experiment, the practitioners' request was not a pro-social request. Previous studies have found that touch is also effective to encourage people to interact with a counselor. However, in these studies, no request was addressed to the patient who still remained free to interact with the counselor (Hollinger, 1986; Pattison, 1973) or to solicit a further interview (Bacorn & Dixon, 1984). Indeed, in these experiments, the behavior of the participant was evaluated a few minutes after tactile contact, whereas in our experiment the effect of touch still remained efficient 7 days after tactile contact. Again, to our knowledge, this is the first evidence that touch has some long-term effect on compliance given the fact that, in previous studies where the effect of touch on compliance to a request was evaluated, the delay between the tactile contact and the request varied between 1 and 3 s (Guéguen, 2002; Hornik, 1987; Kleinke, 1977; Paulsell & Goldman, 1984) to 10–15 min (Hornik, 1992; Smith, Gier, & Willis, 1982). This effect is theoretically important because it seems to prove that the effect of touch is activated as soon as the tactile contact is performed. This effect could be explained by a difference in the perception of practitioner competence in the touch group. Wycoff and Holley (1990) found that airline flight attendants' touching of passengers on the shoulder or forearm were perceived to have higher abilities and expertise than when no touch occurred. It could be interesting in further study to explore the link between medication compliance and perception of practitioner competence associated with touch. Our present experiment did not explore this relation, but showed a positive effect of touch on medication compliance. Thus, we can assess the practical interest of tactile contact for practitioners to increase medication compliance. Touching a patient on the forearm is easy to perform for a practitioner when patients take their leave and it will be interesting to explore further effects of this nonverbal behavior on patients' behavior.

Of course, we found that touch had some limited effect given the fact that tactile contact had increased the number of tablets taken by the patients, but did not have any effect on the number of fully compliant patients. Two explanations are possible to explain the latter result. Firstly, the experiment was conducted in France which is the country in Europe where people consume the largest amount of medication and where the rate of compliance to the medical regimen is one of the lowest (Laude & Tabuteau, 2007). Thus, obtaining full compliance to the medical regimen with French people is perhaps more difficult, especially with patients who are used to consume a lot of medical products prescribed by practitioners. Secondly, the absence of effect on full compliance behavior is perhaps explained by the compliance inducing method used in this experiment. Indeed, in this experiment, we used only one instance of tactile contact. However, recent research had showed that more compliance with a request is obtained when two instances of tactile contact, rather than one, were used by the solicitor during the interaction with the person solicited (Vaidis & Halimi-Falkowicz, 2008). Thus, it would be interesting to enhance compliance with the practitioner's recommendation by using two or more instances of tactile contact during the medical consultation. With this method, it would perhaps be possible to obtain full compliance to the medical recommendation.

This experiment and the use of touch in medical practice present some ethical concerns because using touch is not trivial behavior in social interaction. Field (1999) has pointed out that touching tends to have become taboo in the United States. Mazur and Pekor (1985) found that elementary and high school teachers were warned not to touch children because of potential accusations of sexual abuse. In France, where people use tactile contact more often in their social interactions than people in English countries (Andersen, 1988; Jourard, 1966) there are no recommendations concerning the tactile behavior of teachers or physicians towards children or patients. Of course, tactile contact is necessary in the medical practice. However, some tactile contact could be interpreted as a form of sexual solicitation in cross gender interaction between the practitioner and the patient, especially when the tactile contact occurred after the osculation was completed. Consequently, in spite of the practical interest of touch in medical recommendation, precautions are necessary when using this type of nonverbal behavior and it is important to consider whether touching can be practiced by a physician all the while avoiding misinterpretation especially in cross gender interaction.

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