

Candidate 10058

THE ROLE OF NONVERBAL BEHAVIOURS ON IMPRESSIONS OF EMPATHY AND TRUST

Bachelor's thesis in Psychology, PSY2900

Supervisor: Hojjat Daniali

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Self-Declaration

This is a Bachelor Thesis in Psychology from the Norwegian University of Science and Technology (NTNU), written in accordance with the APA Manual seventh edition (American Psychological Association, 2020). The thesis is written individually as part of a research project performed in collaboration with five other bachelor students. The study was separated into two phases.

The first phase was common for all bachelor students and was planned by our project supervisor PhD-student Hojjat Daniali. Here validity and reliability of a set of videos was tested by coding performed by the students. Videos were provided by Daniali, selected by students, and edited by a fellow student to fit the study setup for phase two. Statistical analyses were carried out and interpreted by me, with guidance by our supervisor and fellow students. Primary literature was provided by Daniali, and additional literature was attained by me.

For the second phase the study design, the online survey and coding in Nettskjema.no, measurements, statistical analyses and interpretation, data cleaning, literature and recruitment was executed and collected by the students and me, with guidance from our supervisor. Additionally, I designed two flyers for recruitment purposes. The survey covered all the students' individual research questions, where my research question is based on my own idea. An additional recruitment effort was led by me to enable paid participation through a recruitment service, but due to restraints on resources was not applied for the bachelor project.

Firstly, I would like to thank our supervisor Hojjat Daniali, for his guidance through the entire research project. Thanks is also directed to the research assistants of this project, for their feedback on the thesis and sharing of experience. I would also like to thank my peers on this project, for the great teamwork and common effort. Lastly, I would like to thank my family and friends for helping me through the semester with their encouragement and support.

Abstract

Aim and background: This thesis aims to investigate the role of nonverbal behaviour (NB) on impressions of trust in and empathy of healthcare providers. Research show that it is important for patients to trust their healthcare provider and perceive them as empathic. This is found to be linked to bettering patients' perceived well-being and patient outcomes.

Methods: A study with two phases was conducted. In the first phase a series of videos expressing manipulated nonverbal behaviour was validated by a team of student coders. The NB condition characteristics were: *Warm & friendly, cold & unfriendly, competent & professional, incompetent & unprofessional, enthusiastic & interested, unenthusiastic & bored, and neutral*. For the second phase the same videos were used in an online survey to test the role of nonverbal behaviour characteristics on the impression on trust and empathy.

Results: The NB conditions were found to have high reliability and validity. The participants found the positive NB characteristics (warm, competent, interested) to be highly trustworthy and empathic. Neutral NB characteristic was rated to give moderate trust and empathy.

Conclusion: Healthcare providers should strive to perform NBs characterised as positive, especially *competent & professional* NB, as well as *warm & friendly* NB, to be perceived as being empathic and trustworthy by patients.

Practical implications: The NB characteristics used in this study could be utilized in education of healthcare providers to illustrate which NBs to display, and how, to achieve target patient impressions.

The nonverbal behaviours (NBs) of healthcare providers and patients influences communication between the parties, as well as the patient-provider relationship (Street et al., 2009; Blanch-Hartigan et al., 2018). Nonverbal behaviours of healthcare providers are also found to influence treatment outcomes (DiMatteo, 2004; He et al., 2017). Studies have found that when healthcare providers are perceived as empathic, warm, competent (Kraft-Todd, 2017; Hojat et al., 2011), and trustworthy (Roter et al., 2002; Lee & Lin, 2009), by patients the nonverbal behaviours are influential to these impression formations. In turn the NBs of the healthcare providers were linked to enabling productive communication between patients and providers. Communication is an essential factor in healthcare for correctly mapping and establishing patient needs and it is therefore crucial to understand which factors influence communication (Street et al., 2009). NBs of healthcare providers and the impression these NBs leaves on the patients is two factors which is essential to communication and therefore crucial to study.

NBs are always present in communications (Blanch-Hartigan et al., 2018), and a vast amount of information is conveyed through NBs (Knapp & Hall, 2010). NBs is defined as behaviour and actions devoid of linguistic information (Roter et al., 2006). Examples being posture, facial expressions, tone of voice, body movement and more (Knapp et al., 2013). NBs plays an important part in people's formation of impressions of others (Burgoon et al., 2016), and is processed and performed rapidly and often unconsciously (Pease & Pease, 2004; Hsee et al., 1990; Zuckerman et al., 1981). Social interactions without NBs are simply impossible, as even interactions without any form of, or as neutral as possible, bodily movement, facial expressions, or regulation of tone of voice would inflict an impression (Blanch-Hartigan et al., 2018). Humans are constantly sending and receiving information through NBs (Blanch-Hartigan et al., 2018; Said et al., 2009; Knapp et al., 2013), and through

NBs, one can judge others emotional state, mood (Roter et al., 2002), attitude, and feelings (Holoien & Fiske, 2013; Knapp et al., 2013).

NBs are diverse and many but can theoretically be separated into two levels: Macro- and micro-level NBs. Micro-level NBs are isolated expressions and behaviours such as eye contact, the tone of voice, individual facial expressions like smiling, raised eyebrows etc. As well as body movement like the amount of leaning forward, posture, hand gestures etc (Ambady et al., 2000). Macro-level NBs are usually a combination of several micro-level NBs that convey a message such as being friendly, warm, competent, or interested (Anderson & Guerro, 1998; Burgoon et al., 2016; Daniali et al., 2023/unpublished; Knapp & Hall, 2013).

Positive micro- and macro-level NBs of health providers (e.g., longer eye contact, closer proximity to the patient, smiling and expressive body movements) is linked to lower reports of pain and other symptoms (Daniali & Flaten, 2019; Ruben et al., 2017; Necka et al., 2021). Additionally, NBs have been linked to increasing patient trust in healthcare providers. Specifically, the protruding of provider empathy and warmth has been found to be associated with increased trust (Thom et al., 2002). Trust is a critical component of healthcare, as it affects patient-clinician relations, promotes improved compliance, leading to better patient outcomes (Lee & Lin, 2009; Street et al., 2009). Further, physician empathy is a factor that has been associated with better patient outcomes and patient satisfaction (Kim et al., 2004; Hojat et al., 2011).

Hojat et al. (2011) found that when physicians displayed more emphatic NBs, such as more eye contact, moderate amount of touch, and body positioning, diabetic patients tended to have a better glycemic control, lower cholesterol levels and better adherence to their medication regiment. Trust was also found to mediate the relationship between the healthcare provider's empathy and patients' adherence to their treatment plan for diabetes (Hojat et al., 2011). Another study, by He et al. (2018) found that a warm, friendly, empathic, and

supportive communication style strengthened patients' positive expectations and increased their perceived improvement. Other impressions of empathic healthcare providers have been linked to NBs characterised as warmth and competence (Kraft-Todd et al., 2017).

These findings illustrate the importance of nonverbal behaviours for healthcare providers and their potential impact on patient outcomes. However, there is a lack in studies investigating macro-level nonverbal behaviour in relation to impressions of both trust and empathy. The use of experimentally manipulated NB characteristics in form of videos is especially lacking in research, as most studies on NBs in healthcare utilize still pictures to illustrate NB characteristics. Also, the NB characteristics investigated in research are often limited to a few characteristics, which can be unspecified and vague. In addition, there is a lack of studies utilizing systematically manipulated and specified NBs, making replication difficult and inaccessible. When studying NBs there is also often focus on what could be classified as micro-level NBs or a mix between macro- and micro-level, where distinction between the two is ill-defined. Further research on the role of systematically manipulated macro-level nonverbal behaviours on impressions of empathy and trust is therefore needed, which is what this study will attempt to investigate.

Study Aim

This study aimed to investigate if macro-level nonverbal behaviour characteristics influence participants impression of a videotaped healthcare provider's trustworthiness and empathy. To investigate this, firstly the construct validity, and reliability of several NB condition videos were investigated in phase one of the study. Thereafter the videos were introduced to participants in an online study in phase two. The NB conditions were: *Warm & friendly, cold & unfriendly, competent & professional, incompetent & unprofessional,*

enthusiastic & interested, *unenthusiastic & bored*, as well as one *neutral* condition. The videos showed a videotaped healthcare provider (VHP) recommending an analgesic cream for thermal pain in context of a pain stimulation experiment. Across the video conditions, the VHPs delivered identical verbal information regarding the experiment, and it was only the NB characteristics of the VHPs that differed between the conditions.

The first hypothesis for phase one of the study is that the coding items are reliable (H1). A second hypothesis is that the NB conditions are rated consistent across coders (i.e., inter-rater reliability) (H2), and across actors (H3). A fourth hypothesis is that the NB conditions hold construct validity, meaning that they express the psychosocial characteristics that they were intended to express (H4).

For the second phase of the study one hypothesis is that the *competent & professional* group will rate the healthcare providers as more trustworthy than the other NB groups (H5). Also, it is hypothesized that the participants in the *warm & friendly* NB group will rate higher impressions of empathy than the participants in all the other groups (H6). The NB conditions presented in this study can be separated into positive, negative, and neutral NBs. Positive NBs was defined as conveying positive emotions, negative NBs as conveying negative emotions and neutral NB as conveying as little as possible emotion to the observer (Daniali et al., 2023/unpublished). In relation, it is lastly hypothesized that the participants in the positive NB groups (*warm & friendly*, *competent & professional*, and *enthusiastic & interested*) will rate higher impressions of trustworthiness and empathy than the participants in the negative NB groups (*cold & unfriendly*, *incompetent & unprofessional*, and *unenthusiastic & bored*) and the control condition (*neutral* NB) (H7).

Phase One

Methods

To ensure that the NB videos express the psychosocial characteristics that they were intended to express an initial validation process was conducted.

Coders

A group of 7 students (6 bachelor students, 1 master student) from the Department of Psychology at NTNU coded 14 NB videos. The coders were participating in the bachelor project on nonverbal behaviour. All coders were female, $M = 22.6$ years, $SD = 1.51$ years, ranging from 21-25 years old. The students were all fluent in Norwegian and English.

Materials

NB Videos and Nonverbal Characteristics. Fourteen videos displayed seven different conditions of macro-level nonverbal behaviour and characteristics. The conditions were performed by two different actors making it fourteen videos in total, one NB condition per video. Utilizing videotaped experimenters has formerly been shown to be an acceptable method for relaying information non-verbally to participants (Ruben et al., 2017). The verbal script was identical for all conditions, making the verbal information identical across all NB videos. The scenario acted out in all conditions were identical. In short, the videos showed an actor portraying as a healthcare provider leading the viewer through an experiment on heat pain where a pain-relieving cream was introduced.

For the nonverbal characteristics displayed in each condition the actors were asked to perform the verbal script while expressing instructed desired nonverbal behaviours. For the

condition *warm & friendly* the actresses were asked to express frequent smiling, enhanced eye contact, welcoming body postures with expressive hand movements, while speaking with warm and friendly tone of voice. For the condition *competent & professional* the actors expressed limited smiling, serious facial expressions, more dominant body gestures, and spoke with an authoritative tone of voice. For the *enthusiastic & interested* condition the actors performed excited facial expressions and longer eye contact and gaze, an enthusiastic and energetic tone of voice, and enhanced body movements and open body gestures. In the *neutral* condition the actors kept all their NB neutral by not looking frequently into the camera, expect one direct look at each dialogue segment, standard distance to the camera (one meter). Also, they kept a flat and plain face, did not make any hand or body movements, and kept a straight sitting position (no forwards or backwards leaning), and held a monotonous tone of voice. In the condition *cold & unfriendly* the actor showed almost no smiling, minimal gaze, a cold tone of voice, and a closed and defensive body posture. In the *incompetent & unprofessional* condition the actors behaved with anxious facial expressions and an anxious tone of voice, worried eye and mouth movements, and agitated body movements. Lastly, for the *unenthusiastic & bored* condition the actors displayed bored facial expressions, minimal gaze, flat and monotonous tone of voice, as well as bored body posture and movements. The performances were repeated until a desirable acting performance in accordance with the specific condition was recorded. A nonverbal communication researcher (Hojjat Daniali) and a professional actor were present during the filming and provided feedback to the actors, based on the general impression of the nonverbal performance of the actors.

Videotaped Healthcare Providers (VHP). The two different videotaped healthcare providers (VHPs) acting for the NB conditions were both adult (late twenties), wearing light makeup and a white lab coat, and were Caucasian. They were both Norwegian and female, and all videos were performed in English.

Procedures

Coding. Before coding the NB videos, the student coders received some primary information on NBs and a briefing on how to rate the NB characteristics. The coders were told to watch each video and rate them immediately after based on the items in the coding scale (see below), no specific definitions of the items were provided to the students. The coding process started with the positive conditions *warm & friendly*, followed by *competent & professional* and *enthusiastic & interested* all by actor One. After the similar conditions and order by actor Two was viewed and coded. Thereafter, the negative conditions by actor One was coded, starting with *cold & unfriendly*, followed by *incompetent & unprofessional* and then *unenthusiastic & bored*. Following, the negative NB videos by actor Two was similarly coded. Lastly, the *neutral* condition by actor One was coded, and then coded for actor Two.

Measurements

NB Coding Scale. To validate the NB conditions a coding scale developed for the purpose of this study (by Daniali, Ruben and Flaten) was used to measure the observer's impression of the VHP's characteristics and NBs. The sheet asked the question "How much did the healthcare provider seem..." and contained 24 items indicating an impression of a personal quality (such as "warm", "competent", "fake", "anxious" and "dumb"). (See appendix A for the full coding scale). The items were rated on a Likert-scale from 0 to 5, where 0 indicated "not at all", 1 "little", 2 "moderate", 3 "much", and 4 indicated "very much". For validation of the NB conditions only the items directly related to the NB characteristics were used. Meaning that the rating characteristics of "warm" was used to measure the condition *warm & friendly*, and "negative" was used to measure the *cold & unfriendly* condition. "Competent" was used to measure the level of competence in the condition *competent & professional*. "incompetent" was used for the *incompetent & unprofessional* condition. Also, "interested" was used to measure the condition *enthusiastic &*

interested, whilst “bored” was used to measure the *unenthusiastic & bored* condition. There was no item labelled “neutral”, as being neutral is not a characteristic that could be directly tested and measured. This is because being neutral ideally indicates the absence of any characteristics.

Data screening

For the initial phase of the study the NB coding data was collected through Google forms and converted into SPSS. All data collected from coders were included in the analysis, as there were no missing values. There were a few outliers, but they were not removed. One should therefore be careful when interpreting the results.

Statistical Analysis

IBM SPSS Statistics release 27.0.10 was used. To test the reliability of coding items, Cronbach alpha was used (H1), and Interclass Correlation Coefficient (ICC) was run to investigate inter-rater reliability (H2). Assumptions for the tests was investigated primarily. To test the differences between actors an independent samples t-test was used (H3). Then, to test the construct validity of the NB conditions (H4), a one-way multivariate analysis of variance (MANOVA) was run with the factor Condition (*warm & friendly, cold & unfriendly, competent & professional, incompetent & unprofessional, enthusiastic & interested, unenthusiastic & bored, and neutral*) as the between factor and the rating items of (warm, negative, competent, incompetent, interested, and bored) as the dependent factors. A Tukey post hoc test was used to follow on significant differences in ratings across conditions. Tukey was chosen due to the test’s robustness against type I error.

Ethics

Participation in the bachelor study was voluntary. No personal identifying information or sensitive information was collected about the coders in this study, and therefore there was

no need for further ethical approval. The first phase was otherwise also in accordance with the National Research Ethics Committees (NESH) on conducting research (National Research Ethics Committees, 2022).

Results

Descriptives

Table 1 shows the descriptives for the rating of the impressions for each NB condition.

Table 1

Mean and standard deviation of items rating NB characteristics across conditions.

<i>NB Video</i>	<i>Warm M (SD)</i>	<i>Negative M (SD)</i>	<i>Competent M (SD)</i>	<i>Incompetent M (SD)</i>	<i>Interested M (SD)</i>	<i>Bored M (SD)</i>
W&F	3.79 (0.10)	0.00 (0.00)	3.07 (0.10)	0.00 (0.00)	3.86 (0.20)	0.00 (0.00)
C&UF	0.36 (0.30)	3.86 (0.20)	2.64 (0.30)	0.29 (0.00)	0.93 (0.10)	1.57 (0.40)
C&P	2.36 (0.51)	0.00 (0.00)	3.93 (0.10)	0.00 (0.00)	3.00 (0.00)	0.00 (0.00)
IN&UP	1.36 (0.30)	0.21 (9.10)	0.14 (0.00)	3.93 (0.10)	0.86 (0.00)	0.57 (0.40)
E&I	2.79 (0.10)	0.00 (0.00)	3.00 (0.00)	0.14 (0.00)	3.71 (0.00)	0.00 (0.00)
UE&B	0.71 (0.10)	3.00 (0.61)	0.79 (0.30)	2.29 (0.00)	0.00 (0.00)	4.00 (0.00)
NU	1.00 (0.40)	0.36 (0.51)	1.57 (0.40)	0.29 (0.00)	0.71 (0.40)	0.43 (0.40)
Total	1.67 (1.32)	0.92 (1.35)	2.16 (1.32)	0.99 (1.47)	1.87 (1.54)	0.94 (1.42)

Note. N = 7. M = mean, (SD) = standard deviation. W&F = warm & friendly, C&UF = cold & unfriendly, C&P = competent & professional, IN&UP = incompetent & unprofessional, E&I = enthusiastic & interested, UE&B = unenthusiastic & bored, NU = neutral.

Inter-rater Reliability on Coding items

The Cronbach α and ICC between the coders across actresses showed high reliability of item ratings and high internal consistency for the items and between coders. See table 2 for values.

Table 2

Cronbach α and intra-class coefficients between the coders and across actresses

<i>Coding Items</i>	<i>α</i>	<i>ICC</i>
Warm	.97	.81
Competent	.98	.85
Interested	.97	.81
Negative	.97	.83
Incompetent	.98	.86
Bored	.98	.86

Note. ICC: intraclass coefficients using two-way mixed effects model. Cronbach α : values $\geq .70$ = acceptable reliability. ICC: values $\geq .70$ = acceptable reliability. N coders: 7.

Testing differences Between Actors

An independent-samples t-test showed that there were no significant differences ($p > .05$) in the ratings (warm, competent, interested, negative, incompetent, and bored) of any of the NB characteristics between actress one, $M = 1.45$, $SD = 1.47$, and actress two, $M = 1.40$, $SD = 1.44$. The ratings of NB characteristics for actress 1 and actress 2 will therefore be merged in further analysis.

Validity of the NB Videos

The one-way MANOVA showed a significant main effect of the conditions for all rating items $F_s(6, 7) = > 39.61$, $p < .001$. Therefore, the Tukey tests were investigated.

For Warmth, the condition *warm & friendly* was rated higher than the *cold & unfriendly* condition, $\Delta M = 3.43$, $SE = 0.30$. $p < .001$, and the *neutral* condition, $\Delta M = 2.76$,

$SE = 0.30$. $p < .001$. For Negative, the *cold & unfriendly* condition was rated higher than the *warm & friendly* condition, $\Delta M = 3.86$, $SE = 0.31$. $p < .001$, and the *neutral* condition, $\Delta M = 2.50$, $SE = 0.31$. $p < .001$. For Competent the condition *competent & professional* was rated higher than the *incompetent & unprofessional* condition, $\Delta M = 3.79$, $SE = 0.23$. $p < .001$, and the *neutral* condition, $\Delta M = 2.36$, $SE = 0.23$. $p < .001$. For Incompetent, the *incompetent & unprofessional* condition was rated higher than the *competent & professional* condition, $\Delta M = 3.93$, $SE = 0.04$. $p < .001$, and the *neutral* condition, $\Delta M = 3.64$, $SE = 0.04$. $p < .001$. For Interested the *enthusiastic & interested* condition was rated higher than the *unenthusiastic & bored* condition, $\Delta M = 3.71$, $SE = 0.17$. $p < .001$, and the *neutral* condition $\Delta M = 3.00$, $SE = 0.17$. $p < .001$. For Bored the *unenthusiastic & bored* condition was rated higher than the condition *enthusiastic & interested*, $\Delta M = 4.00$, $SE = 0.26$. $p < .001$, and the *neutral* condition, $\Delta M = 3.57$, $SE = 0.26$. $p < .001$.

Discussion

In short, the results of the phase one study showed that the coding items were reliable, as shown by Cronbach alpha values; meaning the coders had agreed on the rating of the coding items for the NBs. Also, the actors had similar performances, proven by the t-test, and were similarly rated proven by the ICC analysis. Additionally, the NB conditions held acceptable validity, as shown by the ANOVA results.

The Cronbach alpha showed acceptable results for the coding items (H1), and acceptable inter-rater reliability was found through the ICC (H2). This proves that the rating scale had acceptable psychometric properties to reliably measure the NBs and that the coders agreed on the ratings of the NB conditions. It is interesting that these were the findings even though the

coding items were not operationalized, hence no clear definition of each item was provided to the coders. This is in opposition with literature that states that words and phrases used for rating a specific phenomenon or psychosocial property require operationalization to ensure reliability (Blanch-Hartigan et al., 2018; DeVellis, 2012, p. 13, p. 37).

There were no differences between the two actors. This finding proves that the NB conditions were rated consistently across actors. This means that the similar ratings of the VHPs could be attributed to their display of NBs, and not to individual differences. This suggests that the manipulations of NB characteristics for both actors were congruent across actors with the target NB characteristics for each NB condition. Hence, findings of the validity tests will be based on the NB characteristics of the actors, which is also why the results from both actresses were merged in the subsequent online study.

Further, the MANOVA test showed that NB conditions were in accordance with the psychosocial characteristics they were meant to portray. The conditions were all rated as different than the neutral condition, both the negative NB conditions and the positive NB conditions, but the mean difference to the neutral condition was for all conditions low to moderate. All conditions had the highest rating of the item directly measuring the characteristics portrayed in the NB condition, for instance the rating warmth was highest for the condition *warm & friendly*. Also, the conditions were scored lowest in the corresponding opposite rating item for the condition. This was true for all ratings and conditions except for the rating of “interested”, here the highest mean scoring was found in the *warm & friendly* condition, and not in the *enthusiastic & interested* condition (which scored second highest on the rating of being “interested”). The difference in rating of interested between the groups was however minor, and the validity of the enthusiastic & interested NB condition can still be argued for. The validity testing therefore proved the validity of the NB conditions which

implies that the NB conditions expressed the NB characteristics that were initially designed to express, giving support for H4.

Furthermore, an interesting finding was that the negatively loaded rating items showed low mean ratings of the neutral condition, and a low to moderate mean rating of the positively loaded rating items in the neutral condition. This means that the neutral condition was in general seen as more positive than negative. Still, the neutral condition was not seen nearly as positive as the positive conditions, and not as negative as the negative NB conditions were rated. This indicates that being neutral in ones NBs could possibly also be perceived as being neutral by others to some degree. In one way this contradicts literature that suggest that it is nearly impossible to be neutral in ones NBs as all NB will put forth some degree of characteristics (Blanch-Hartigan et al., 2018; Knapp et al., 2013; Said et al., 2009). In another way the neutral condition was rated as giving an impression (based on the six rating items), however toned down, as compared to the other NB conditions. Notably the other conditions were in contrast directly measured by a specific rating item, and neutral was not. Considering these results further research should explore the possibility of neutral nonverbal behaviour.

In summary, these results show that the study has been successful in experimental manipulation of macro-level nonverbal behaviour into target impression formations by the NBs, making the NB videos applicable for further research.

Phase Two

Methods

As the validity of the NB conditions were approved, an online study was launched to test the role of the nonverbal behaviours; *warm & friendly, cold & unfriendly, competent & professional, incompetent & unprofessional, enthusiastic & interested, unenthusiastic & bored*, and *neutral*, on participants impression on trust and empathy.

Participants

A total of $N = 139$ participants were recruited for an online survey. After data screening the total selection ($N = 124$) consisted of 82 females (66%), and 42 males (34%). The age varied from 18 - 82, with a mean age of 35, $SD = 15.32$.

Study Design

The design was one-way MANOVAs with the Group factor NB condition with 7 levels (*warm & friendly, cold & unfriendly, competent & professional, incompetent & unprofessional, enthusiastic & interested, unenthusiastic & bored*, and *neutral*) as the between, and trust and empathy as the dependent factors. In addition two separate MANOVAs with the group factor Clustered NB conditions with 3 levels (positive NBs, negative NBs, and neutral NB) as the between, and trust and empathy as the dependent factors.

Procedures

Before launching the survey to all participants, a test run limited to 32 participants was conducted, to ensure the sanity of the survey and data collection, these responses were also included in the final sample.

For the second phase of the study the participants were sampled through convenience sampling, where the participants were recruited by announcing a link to an online survey. The link was announced on various global social media channels (e.g., Facebook, LinkedIn, Reddit, Instagram) mainly by the student researchers on this project, and thereon shared word by mouth. Everyone above the age of 18, who was adequately skilled in English was welcomed to participate. Also, unpaid advertisement for the project was done by flyers handed out in the Trondheim area as well as promotion by the student researchers on different university campuses in Trondheim. In addition, announcements in lectures at NTNU and in student housing were made.

The participants were assigned to one common survey preface on Nettskjema.no where online informed consent was given before the participants were randomly assigned (block randomization) to one of the fourteen different forms. Each form contained a single NB condition portrayed by a single actor. Each condition was portrayed by the two actors, making it fourteen forms in total. Forms were identical except for the NB video. The NB videoclips was edited to fit the setting and storyline set for the survey, and the participants watched 4 videos in total. Due to the nature of the different NBs the videos varied in total length from 2 min and 36 seconds, to 3 min and 5 seconds.

In the preface the participants were informed that the purpose of the project was to investigate how characteristics of healthcare providers improve healthcare consultations. They were informed that an experiment, where a videotaped healthcare provider guides “patients” through a pain stimulation and introduces a treatment for heat pain, had been developed. And that before launching the experiment some feedback was wanted. Their task was to mindfully watch some videos of a videotaped healthcare provider and answer questions about the provider’s characteristics and communicational quality. After consenting to participate the analogue patients were sent to one of the forms randomly and instructed to watch the videos

and follow the VHP's instructions as if they were her patient participating in the experiment. After watching the last of the NB videos the participants were asked to rate the NB characteristics of the VHP and fill out the coding scale, identical to the one the coders used. Thereafter questions measuring satisfaction followed and lastly followed the questions measuring trust and empathy in the VHP.

There were 61 participants in the positive NB conditions in total (21 in *warm & friendly*, 20 in *competent & professional*, 20 in *enthusiastic & interested*). 13 participants were in the *neutral* condition. For the negative NB conditions there were 50 participants in total (12 in the *cold & unfriendly* group, 13 in the *incompetent & unprofessional* group, and 25 in the *unenthusiastic & bored* group).

Measurements

Trustworthiness. Trust in the VHP was measured by a 5-item scale, an adjusted version of the Patient Trust in a Physician scale, developed by Dugan et al. (2005). To make the scale fit the scenario of this study the scale was renamed "Patient Trust in Healthcare Provider" and the word "doctor" was replaced with "healthcare provider" throughout the list. The measurement is previously shown to have good reliability with a Cronbach's alpha of .87 (Dugan et al., 2005), and had a high reliability ($\alpha = .83$) for the current study. Trust was measured by the following items: "1. The healthcare provider cares more about what is convenient for them than about your medical needs. 2. The healthcare provider is extremely thorough and careful. 3. You completely trust the healthcare provider's decisions about which medical treatments are best for you. 4. The healthcare provider is totally honest about all of the different treatment options available for your condition. 5. All in all, you have complete trust in the healthcare provider" (Dugan et al., 2005). Each item on the scale measured trust on a Likert-scale from 1 (strongly disagree) to 5 (strongly agree), where higher scores indicate more trust in the healthcare provider. Due to the negative wording of item 1 this item was reverse-

coded. The lowest possible score was 5 whilst the highest possible score was 25 (see appendix B for the scale, and additional information).

Empathy. Perceived empathy of the VHP was measured by an adjusted version of the well-established CARE measure (The Consultation and Relational Empathy measure) (adopted from Mercer et al., 2004). The original 10-item scale (Cronbach's $\alpha = 0.97$) (Bikker et al., 2015), was shortened to a 6-item scale to fit the scenario of this study, excluding items which was related to in-person doctors' consultations. The adjusted CARE measure included the following items: 1. Making you feel at ease, 2. Being interested in you as a whole person, 3. Fully understanding your concerns, 4. Showing care and compassion, 5. Being positive, and 6. Explaining things clearly. The measurement was scored on a 5-item response scale from 1 (poor) to 5 (excellent) performance and behaviour, that allowed for up to two not applicable (N/A) answers, which would be replaced by the average item score (Bikker et al., 2015, scoring of the CARE measure). The shortened CARE measure was found to be highly reliable for this study ($\alpha = .94$). (See appendix C for the scale, and additional information).

Control Question. The survey included a control question to control for the attention paid to videos displayed in the survey. The control question was presented in the middle of the survey and asked the participant about the name of the pain-relieving cream introduced by the videotaped healthcare provider. The participants got three options to choose from, them being "Emle", "Thermoceptor", and "Embla", the last one being the correct answer. Participants that answered wrong on this question were excluded from the dataset.

Other Measurements. Other measurements were also included in the survey, as the survey was common for all bachelor students on the project. Amongst these were measures for age, gender, cultural association, mood, satisfaction, and trust in the healthcare profession.

Additionally, questions related to the scenario and content displayed in the NB videos were included.

Data Collection

For the second phase of the study the data was collected through Nettskjema.no and converted into SPSS. There was no missing data. Data collection for the survey was run from 17.03.23 to 17.04.23 and gained 139 participants.

Data Screening Survey

Responses were excluded from the dataset if the control question was answered wrong, if the participant was under 18 years of age, or if over 1H was used to answer the survey. Also, responses made in less than 7 minutes were excluded. The time exclusion criteria were based on the length of the videos (in total approximately 3 minutes) and the estimated time for completing the survey questions rapidly (around 4 – 9 minutes). In total 15 responses were excluded from the dataset based on these criteria. In addition, 7 responses were excluded from the data collected through the CARE measurement (measuring perceived empathy), as the responses contained more than two “not applicable” responses. This resulted in the total sample size being $N = 124$, and the sample size for the analysis of the empathy being $n = 117$.

Statistical Analysis

IBM SPSS Statistics release 27.0.10 was used. Two separate MANOVAs were run to investigate the effect of the factor NB conditions (consisting of 7 levels: *warm & friendly*, *cold & unfriendly*, *competent & professional*, *incompetent & unprofessional*, *enthusiastic & interested*, *unenthusiastic & bored*, and *neutral*) on the rating on trust (dependent variable) and on empathy. A Tukey post hoc test was used to follow up the significant main differences.

To further analyse the differences in ratings of both trust and empathy and the influence of negatively, positively, or neutral loaded NB conditions a new variable was created. The new variable “NB Grouped” was created from re-coding the variable “condition”, which originally consisted of 7 levels. Here the NB conditions was clustered into three levels, one for positive NBs, one for negative NBs and one for neutral NB. The positive NBs level consisted of the three positive NB conditions: *Warm & friendly, competent & professional*, and *enthusiastic & interested*. The second level consisted of all the negative NB conditions: *Cold & unfriendly, incompetent & unprofessional*, and *unenthusiastic & bored*. The neutral level consisted of the single *neutral* condition.

Two similar one-way MANOVAs were then conducted to investigate the differences between positive, negative, and neutral NB conditions on trust and empathy separately. A Tukey post hoc test was run for the MANOVA investigating trust. Assumptions for MANOVA was investigated primarily. Levene’s test was significant at the 0.05 level, and some outliers were found, for the MANOVA on empathy. A Games-Howell post hoc test was therefore run, as it controls for uncertainty of variance homogeneity.

Ethics

Participation in the online survey was voluntary. No personal identifying information or sensitive information was collected about the participants in this study, making the survey anonymous. Therefore, there was no need for further ethical approval, and the study was otherwise also in accordance with the National Research Ethics Committees (NESH) on conducting research (National Research Ethics Committees, 2022).

Results

Impression on Trust

Descriptives

Table 3

Descriptive statistics for MANOVA of perception of Trust in the videotaped healthcare provider by NB condition groups.

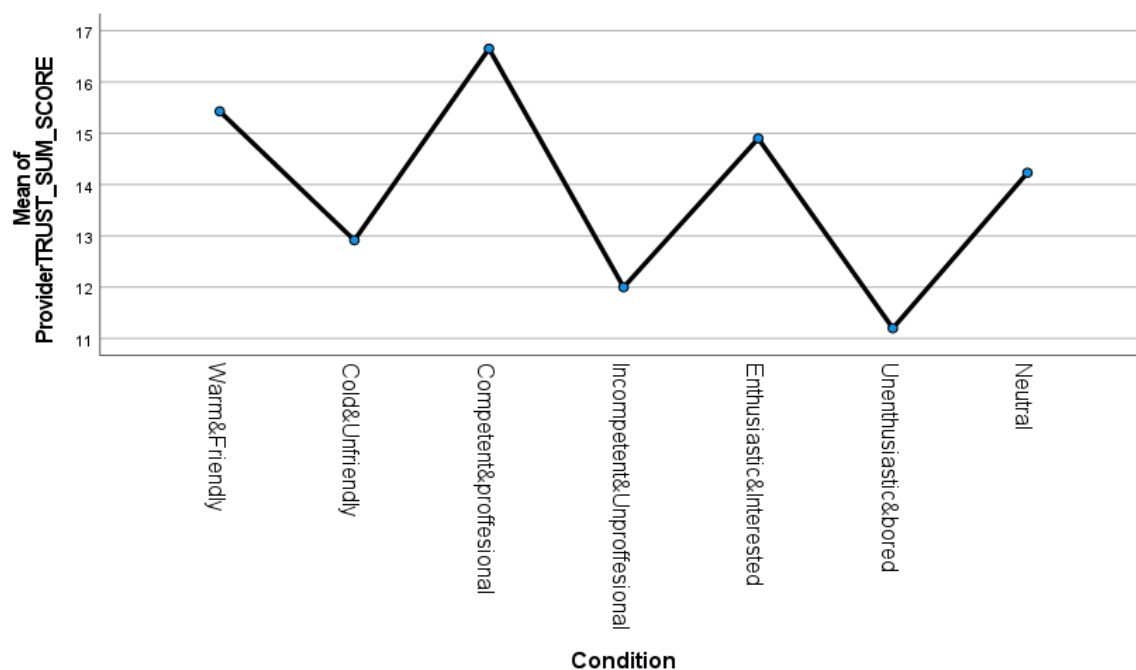
Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Warm & friendly	21	15.43	3.84	8	22
Cold & unfriendly	12	12.92	4.06	7	19
Competent & Professional	20	16.65	3.75	10	24
Incompetent & unprofessional	13	12.00	3.83	5	19
Enthusiastic & interested	20	14.90	3.95	6	20
Unenthusiastic & bored	25	11.20	2.96	6	16
Neutral	13	14.23	2.74	8	18
Total	124	13.96	4.01	5	25

Note. *N* = group size, *M* = mean of trust score, *SD* = standard deviation, *Min* = minimum score, *Max* = maximum score.

Impressions of Trust from NBs. The main effect of NB conditions on trust was significant, $F(6, 123) = 5.95, p < .001$. The Tukey post hoc test showed that the *competent & professional* condition was rated as more trustable than the condition *unenthusiastic & bored*, $\Delta M = 5.45, SE = 1.26, p < .001$, and the *incompetent & unprofessional* condition, $\Delta M = 4.65, SE = 1.28, p = .008$. The condition *warm & friendly* was also rated as more trustable than the condition *unenthusiastic & bored* condition, $\Delta M = 4.23, SE = 1.07, p = .002$. The *enthusiastic & interested* condition was rated as more trustable than the *unenthusiastic & bored* condition, $\Delta M = 3.70, SE = 1.08, p = .014$. There were no other significant findings, and no significant difference between the neutral condition and any of the other conditions in the ratings of trust in the VHP. See Figure 1 for means plot.

Figure 1

Means plot showing differences in rating of trust in the VHP across NB condition groups.



Impressions of Trust from Clustered NBs

Descriptives. Out of the seven-level factor “NB condition” a new three level factor was created from clustering the NB conditions based on their general ability to convey positive, negative, or neutral emotions. See table 4 below for descriptives.

Table 4

Descriptive statistics for MANOVA of perception of trustworthiness of videotaped healthcare provider across clustered NB condition groups.

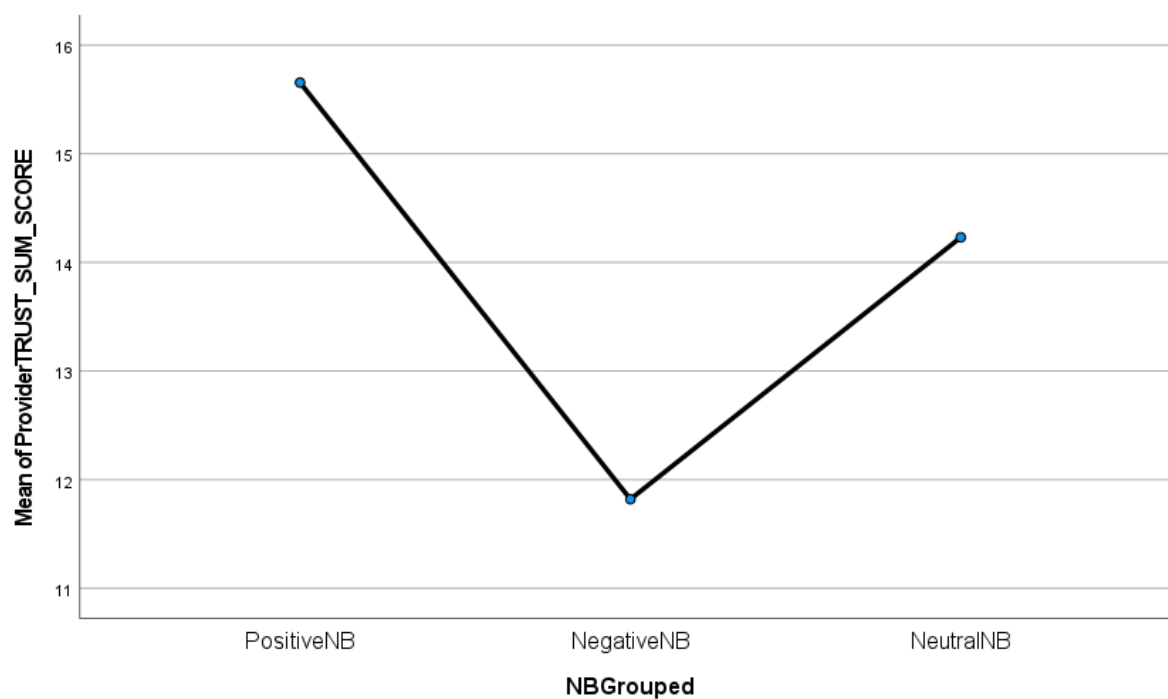
Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Positive NBs	61	15.66	3.85	6	24
Negative NBs	50	11.82	3.47	5	19
Neutral NBs	13	14.23	2.74	8	18
Total	124	13.96	4.01	5	24

Note. *N* = group size, *M* = mean of trust score, *SD* = standard deviation, *Min* = minimum score, *Max* = maximum score.

Impressions of Trust from Clustered NBs. The main effect of clustered NB conditions on trust in the VHP was significant $F(2, 123) = 15.61, p < .001$. The Tukey post hoc test showed that the *positive NB* group rated the VHP as more trustable than the *negative NB* group, $\Delta M = 3.84, SE = 0.69, p < .001$. There was no significant difference in the impression of trust between the *positive NB* group and the *neutral NB* group, as well as between the *negative NB* group and the *neutral NB* group. See Figure 2 for means plot.

Figure 2

Means plot showing differences in rating of trust in the VHP across clustered NB condition groups.



Impressions on Empathy

Descriptives

Descriptive statistics for MANOVA on impressions of empathy from NB conditions is shown in table 5 below.

Table 5

Descriptive statistics for MANOVA of the perception of empathy of videotaped healthcare provider by NB condition groups.

Group	N	M	SD	Min	Max
Warm & friendly	20	17,95	6,25	8	30
Cold & unfriendly	12	11,92	3,99	8	19
Competent & Professional	19	18,68	5,77	9	30
Incompetent & unprofessional	12	10,17	3,41	6	18
Enthusiastic & interested	17	18,06	5,70	8	27
Unenthusiastic & bored	24	9,42	3,56	6	19
Neutral	13	14,08	5,33	9	25
Total	117	14,49	6,24	6	30

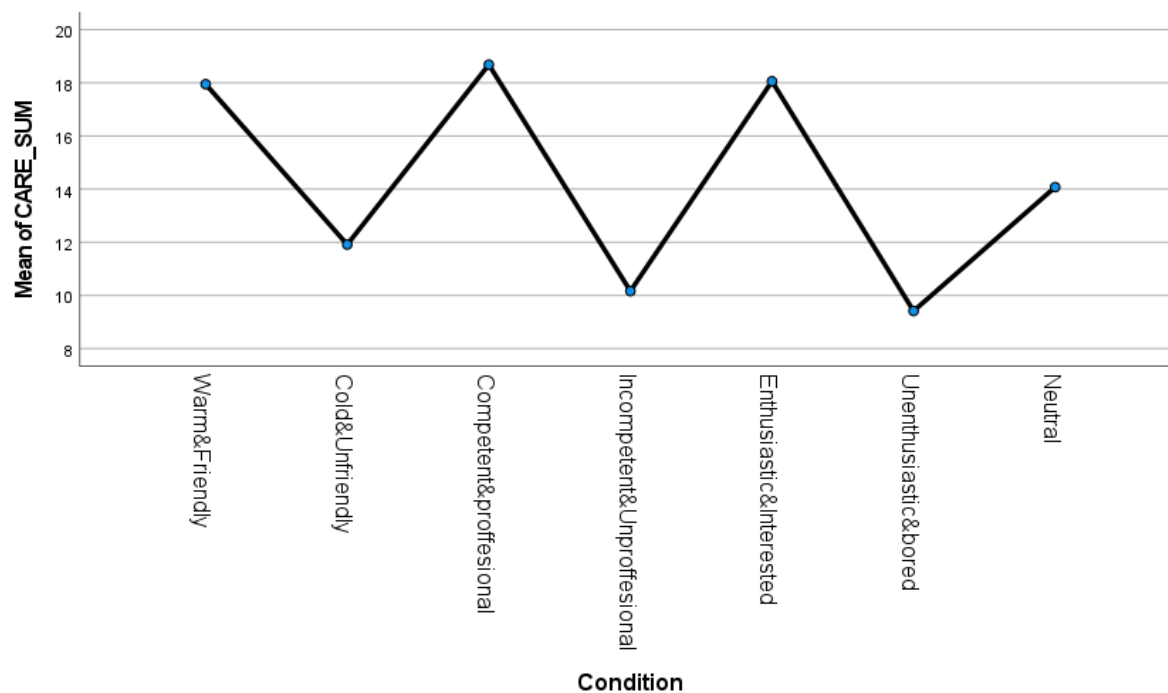
Note. *N* = group size, *M* = mean of CARE (empathy) score, *SD* = standard deviation, *Min* = minimum score, *Max* = maximum score.

Impression on Empathy from NBs. The main effect of NB conditions on rated empathy of the VHP was significant $F(6, 116) = 11.24, p < .001$. The Tukey post hoc test showed that the *competent & professional* condition was rated as more empathic than the *unenthusiastic & bored* condition, $\Delta M = 9.27, SE = 1.55, p < .001$, and the *incompetent & unprofessional* condition, $\Delta M = 8.52, SE = 1.86, p < .001$. In addition to the *cold & unfriendly* condition, $\Delta M = 6.77, SE = 1.86, p = .007$. The *enthusiastic & interested* condition was rated as more empathic than the *unenthusiastic & bored* condition, $\Delta M = 8.64, SE = 1.60, p < .001$, and the *incompetent & unprofessional* condition, $\Delta M = 7.89, SE = 1.90, p < .001$. In addition to the *cold & unfriendly* condition, $\Delta M = 6.14, SE = 1.90, p = .026$. The rating of empathy of the VHP was also significantly higher in the *warm & friendly* condition, than in the *unenthusiastic & bored* condition, $\Delta M = 8.53, SE = 1.53, p < .001$, and the *incompetent & unprofessional* condition, $\Delta M = 7.78, SE = 1.84, p < .001$, as well as the *cold & unfriendly* condition, $\Delta M = 6.03, SE = 1.84, p = .023$. There was no significant difference in the rating of

empathy between any of the conditions and the *neutral* condition. See Figure 3. for means plot.

Figure 3

Means plot showing differences in rating of empathy of the VHP across NB condition groups.



Impressions on Empathy from Clustered NBs

Descriptives

Table 6

Descriptive statistics for MANOVA of perception of empathy of VHP by clustered NB condition groups.

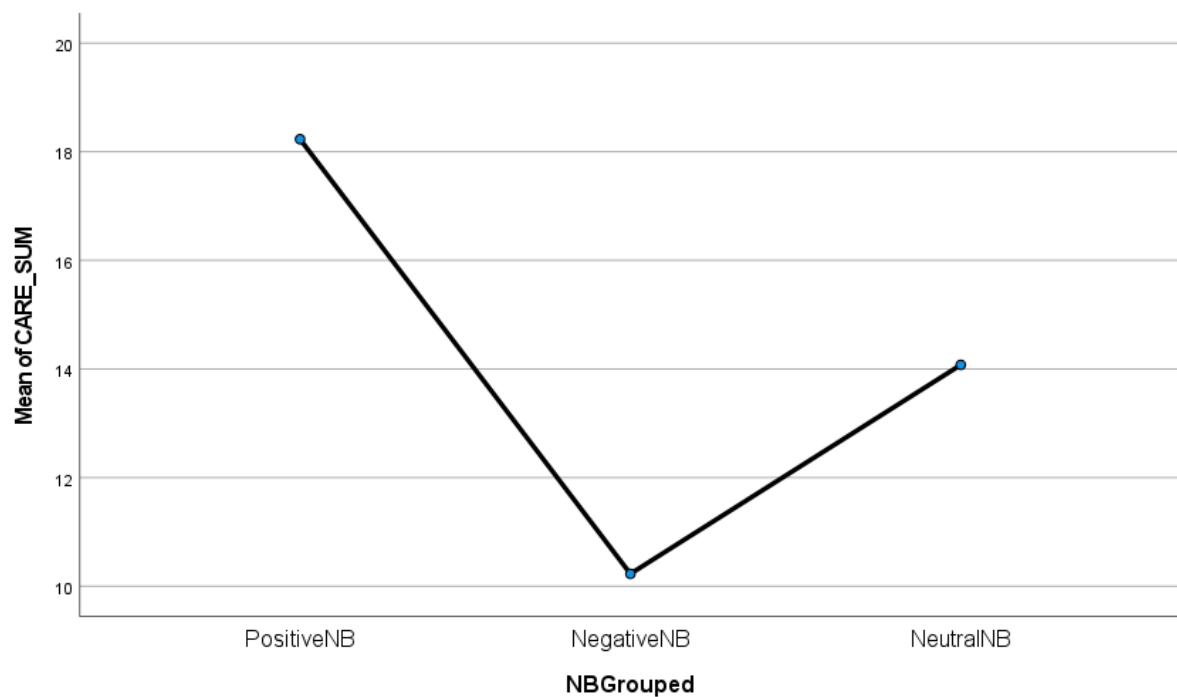
Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Positive NBs	56	18.23	5.83	8	30
Negative NBs	48	10.23	3.70	6	19
Neutral NBs	13	14.08	5.33	9	25
Total	117	14.49	6.34	6	30

Note. *N* = group size, *M* = mean of empathy score, *SD* = standard deviation, *Min* = minimum score, *Max* = maximum score.

Impressions on Empathy from Clustered NBs. The main effect of clustered NB conditions on empathy of the VHP was significant, $F(2, 116) = 33.14, p < .001$. The Games-Howell post hoc test showed that *positive NB* group rated the VHP as more empathic than the *negative NB* group, $\Delta M = 8.00, SE = 0.94, p < .001$, and the *neutral NB* group, $\Delta M = 4.16, SE = 1.67, p = .055$. There was no significant difference between the *negative NB* group and the *neutral NB* group in the rating of empathy, $\Delta M = 3.85, SE = 1.57, p = .066$. See Figure 4 for means plot.

Figure 4

Means plot showing differences in rating of empathy of the VHP across NB condition groups.



Discussion

The results of the phase two study showed that *the competent & professional* group was rated most trustable (H5) and empathic (H6). Also, the clustered *positive NB* group rated higher impressions of trust and empathy of the VHP, than the clustered *negative NB* group, in addition to the *neutral NB* group in terms of empathy (H7).

The results showed that when the VHP displayed *competent & professional* NB characteristics the participants found the VHP as trustworthy and rated the highest levels of trust out of all the participants in the other NB groups (H5). This is also in line with previous research that states that it is essential for healthcare providers to be perceived as competent if they are to make the patients put trust in them (Hall et al., 2002, p. 336 & p. 346). However, the difference in rating of trust was minimal when compared to the *warm & friendly* NB group. The participants that watched the VHP that displayed NBs characterised as *enthusiastic & interested* also rated high levels of trust in the VHP. Similar to this was the rating by the participants in the *neutral* NB group, with only a minor difference in mean scores. Even so, there was not found any significant difference when the two groups were compared.

What is interesting however, is how the *neutral* condition was not proven significantly different from any of the other NB conditions in the ratings of trust. This was also the case when all 7 NB conditions were clustered based on the emotional affect they inflicted. Here, the positive NB group found the VHPs as significantly more trustworthy than the negative NB group, but not significantly different when compared to the neutral NB group.

Nevertheless, the ratio of ratings of trust was found to be as expected, where the lowest mean score of trust was rated by the negative NB groups, the moderate ratings by the neutral group, and the highest ratings of trust in the positive NB groups, both when groups were clustered and separate.

Based on these results it can be argued that when a healthcare provider wishes to make their patients trust them, they are most likely to succeed through displaying a range of positive NB characteristics (*warm & friendly, competent & professional, and enthusiastic & interested*), especially if they appear *competent & professional*. And are also likely to be perceived as trustable if they try to act as neutral in their nonverbal behaviour as possible. These findings suggest that further research should be done to investigate if there really is a crucial difference for healthcare providers to display positive NBs over displaying neutral NBs. It is however important to note that displaying neutral NBs, and it in turn coming off as neutral to the viewer can be challenging. As literature suggest that there is no such thing as being neutral, or neutral impressions (Blanch-Hartigan et al., 2018; Knapp et al., 2013).

In practice, it can be easier for a Healthcare provider to try to display NBs labelled as positive in general, rather than trying to only channelise NBs that specifically give off competent impressions. One can reason this, as the results of this study is based on NBs that is meticulously manipulated by professional actors in a controlled setting. Meaning application in real life could be different and not as easily distinctly expressed, which calls for further research.

Further, the results showed that the NB condition of being *competent & professional* was rated as most empathic. This defeats the hypothesis that being warm and friendly would be the characteristic that gave the highest impression of empathy (H6). However, the *competent & professional* condition only scored marginally higher than the other positive NB characteristics. One possible explanation to these results is how previous research and literature has shown that both characteristics of competence and warmth has been linked to impressions of empathy in healthcare (Howe et al., 2019; Kraft-Todd et al., 2017).

When the NBs were clustered and analysed the positive NB condition was rated as most empathic, and significantly more empathic than the negative NB condition. This gives support

for the hypothesis (H6) that the participants in the *positive NB* conditions will rate higher impressions of empathy than the participants in the *negative NB* conditions, and the *neutral* condition. An interesting finding was that even though the VHP displayed neutral NB they were seen as somewhat empathic and were rated only moderately lower in empathy than the positive NB condition. The difference was however notably significant between the neutral group and positive and negative NB group both. This was the finding even though there was a great difference in sample size to the neutral group.

General Discussion

One take-away from both phases of this study is how it is made evident that the macro-level nonverbal behaviours displayed by the *competent & professional NB* characteristic can be used as a great example to teach healthcare providers. The characteristic, in addition to the other positive NB characteristics could illustrate what NBs healthcare providers themselves could display to improve their chances of appearing competent to their patients. In addition to increasing their patients trust in them and appearing empathic. These characteristics are previously shown to be favourable for healthcare providers to embody, as they are linked to higher rating of patient satisfaction (Buller & Buller, 1987; Kim et al., 2004; Schmid Mast et al., 2008), better patient adherence to treatment plans, and higher reported perceived improvement (Hojat et al., 2011). Further support is given to this, as all NB conditions were found both reliable and valid, in addition to playing a role in the way participants rated trust and empathy.

Also, impressions of both high empathy and trust were strongly linked to the NB characteristics *warm & friendly* and *competent & professional*. While no major trade-off seemed to affect the ratings between the characteristics. It could therefore be hypothesised that a combination of the two characteristics also could lead to impressions of being highly empathetic and trustworthy. If this is the case, it might be easier for healthcare providers to

apply either or a mix between the two NB characteristics in practice. As this would give greater flexibility to the healthcare provider. However, one should keep in mind that the two characteristics were rated as different from one another by the coders. Further research on this should therefore explore such possibilities, as both characteristics are shown influential in healthcare (Howe et al., 2019; Swik, 2000).

Conclusion

It was found that positive NB characteristics influenced participants to rate the highest scores on trust and empathy, while negative NBs gave low ratings. When the videotaped healthcare provider displayed neutral NB characteristics the participants rated moderate scores on trust and empathy. Coders also rated neutral NB characteristic as giving low to moderate impressions of being warm, competent and interested, and low impressions of items negative, incompetent and bored.

Implications of this study are that healthcare providers should be mindful of what nonverbal behaviours they display to their patients as it is shown that NBs play a role in impression. It could also be suggested that the videos used in this study displaying positive NB characteristics could be tested in education of healthcare providers in order for them to increase patients' perception of them as being empathic and trustworthy.

Strengths, Limitations & Suggestions for Further Research

There were four main limitations to this study concerning biased coders, the sample, and the small sample size, the differences in group sizes, and the study being online. The coders had been working on the raw material for the NB condition videos to edit them and select the most successful takes. Therefore, they were familiar with the intended impression the conditions were made to inflict on the viewer, which may have made them biased in their coding. The coding was however intended to be done in two phases: Phase one being rating

by experienced coders, phase two being rating by blinded participants. The results showed that the participants had rated the different NB conditions similarly to the coders. However, analyses and results of participant ratings was not included in this study, due to the limited scope and focus of the thesis. This means that even though the coders may have been biased the results are still viable. It is also worth mentioning that all coders in phase one were female which might have impacted the results of the coding.

Another limitation is the small sample size. Also, as the sampling for the study was based on convenience sampling the probability that a large portion of the sample consists of university students, and a WEIRD (i.e., western, educated, industrialized, rich and democratic) (Azar, 2010) sample is large. This gives a poor generalizing ability and results therefore cannot be guaranteed to be a proper representation of the population. Further research should therefore strive for a larger, more representative sample to investigate if the results are replicable.

A third limitation is the difference in group sizes between NB condition groups. Especially when comparing clustered NBs, as the neutral group ($n = 13$) was greatly smaller in size compared to the positive NB group ($n = 61$) and the negative NB group ($n = 50$). This makes the results from the neutral group not as representative or as statistically strong as the other samples. This might also be why there were not found any significant differences between the neutral group and the other groups, in terms of ratings of trust.

Additionally, the fact that the study was carried out online might have a limiting effect on the results on the survey, as disturbing or affecting factors cannot be controlled for. Even so, measures were applied to control for this and participants not passing the inclusion criteria were excluded.

On the other hand, there were three main strengths to this study. One strength is that video was utilized to investigate impressions of manipulated NBs. Other is the range of NB characteristics tested, and the line drawn between both trust and empathy in relation to NBs in healthcare. As well as the number of coders.

The first strength is that NBs was presented to participants through videos, instead of still pictures. Videos have a higher chance of inducing an impression in the participants, as compared to still pictures (Krfat-Todd et al., 2017). Also, the fact that the NB characteristics displayed in the videos were experimentally manipulated in a controlled environment gives strength to the study and lends greater chances for replicability. This makes studying NBs in healthcare more accessible, as ethical and practical complications that would be present in real life-manipulation of NBs is removed.

Investigating a range of NB characteristics applied to a healthcare context can also be considered a strength. This especially as, to the best of the author's knowledge, the macro-level NB characteristics *enthusiastic & interested*, and *unenthusiastic & bored* has not specifically been manipulated and researched in relation to healthcare before.

To the best of the authors knowledge there is also no previous studies that investigates this range of manipulated macro-level NBs of healthcare providers in relation to impressions of both trust and empathy. This study therefore adds to the field and the interesting results suggest that further research on the topic is encouraged.

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APPENDIX A

Nonverbal Behaviour Characteristics Coding Scale

Developed by Daniali, Ruben, and Flaten, 2023.

Please rate each of the following statements about the videotaped healthcare provider on a scale from not at all to very much.

How much did the healthcare provider seem ...

1. Competent
2. Confident
3. Independent
4. Competitive
5. Intelligent
6. Tolerant
7. Warm
8. Sincere
9. Good natured
10. Interested
11. Positive
12. Expressive
13. Dominant
14. Empathic
15. Bored
16. Negative
17. Shy
18. Passive and submissive
19. Hostile
20. Anxious
21. Dumb
22. Incompetent
23. Fake
24. Intimidated and unsure

Response choices (coding) are: Not at all (0), Little (1), Moderate (2), Much (3), Very much (4).

APPENDIX B

The Patient Trust in Healthcare Provider Scale*

*Adjusted measure of the “Patient Trust in a Physician Scale”, adopted from Dougan et al., 2005.

1. The healthcare provider cares more about what is convenient for them than about your medical needs.*
2. The healthcare provider is extremely thorough and careful.
3. You completely trust the healthcare provider’s decisions about which medical treatments are best for you.
4. The healthcare provider is totally honest about all of the different treatment options available for your condition.
5. All in all, you have complete trust in the healthcare provider.

Response choices (coding) are: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1). Responses are summed (range 5–25) with higher scores indicating more trust. *Negatively worded item is reverse coded.

In the survey for this study the following text was presented above the scale: ***How trustworthy did you find the videotaped healthcare provider? On the scales below, please indicate how trustable you think the videotaped healthcare provider is by marking how much you agree with the statements, from strongly disagree to strongly agree.***

APPENDIX C

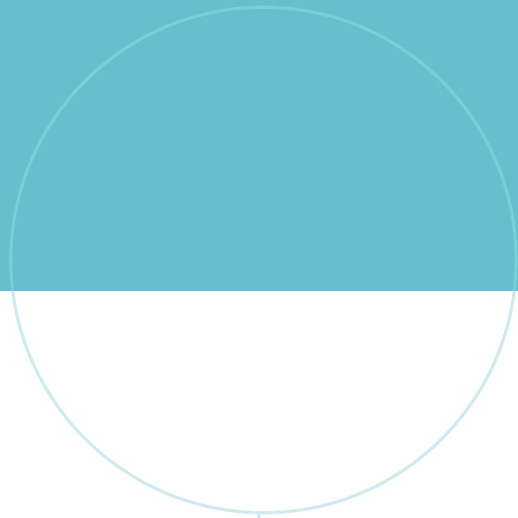
The Consultation and Relational Empathy (CARE) Measure*

*Shortened measure, adopted from Mercer et al., 2004.

	Poor	Fair	Good	Very Good	Excellent	Does not apply
1. Making you feel at ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Being interested in you as a whole person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Fully understanding your concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Showing care and compassion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Being positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Explaining things clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Response choices (coding) are: Poor (1), Fair (2), Good (3), Very Good (4), Excellent (5). The overall score is the sum of the six items, with 6 being the lowest possible score, and 25 the highest. Up to two “not applicable” responses, or missing values are allowed and these are replaced by the average item score. (Adopted and adjusted from Mercer et al., 2004)

In the survey for this study the following text was presented above the scale: ***How empathic did you find the videotaped healthcare provider? On the scales below, please indicate your impression of the videotaped healthcare provider's empathic characteristics by marking how the healthcare provider performed, from poor to excellent.***



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