DOES PERCEIVED EMPATHY IMPACT THE ROLE OF GENDER BIAS IN PHYSICIAN

CHOICE FOR WOMEN'S HEALTH?

by

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Abstract

To ease their patients' discomfort, doctors must spend time building a positive relationship with

their patients (Kim, Kaplowitz, & Johnston, 2004). Ensuring comfort can be done in a multitude

of ways, some of which are patient-physician gender concordance or patient-perceived empathy

(Zuckerman, Nvizedeh, Feldman, McCalla, & Minkoff, 2002; Johnson, Schnatz, Kelsey, &

Ohannessian, 2005). Little research has investigated how these two important factors work

together when a prospective patient is choosing a gynecologist. The current study bridges the gap

between gender concordance and patient-perceived empathy in an individual's decision-making

by using a repeated measure, between-subjects methodology. Researchers manipulated

hypothetical gynecologists' profiles using past patient reviews to express high or low empathy

and listing the gender of the physician as either male or female. Participants rated each physician

on overall likelihood to choose each presented physician. A main effect for gender was found.

Specifically, hypothetical female gynecologists were rated higher in likelihood of choice from

participants overall. However, when a female physician with low empathy was paired with a

male physician with high empathy, the male was rated higher in likelihood of choice from the

participant. Patient-perceived empathy and patient-physician gender concordance interacted to

the effect that participants rated the same physician significantly differently. However, these

ratings were dependent on to whom each physician was being compared. This study built more

support for how prospective patients choose their gynecologists, and what factors are more

important in their decision-making.

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Statement of the Problem

Gynecological exams are a medical necessity that are often considered uncomfortable, intrusive, and even painful (Bates, Carroll, & Potter, 2011). In order to increase patients' comfort, it is crucial for them to have a positive relationship with their gynecologist (Kim, Kaplowitz, & Johnston, 2004). Men have primarily dominated the medical field, including gynecology, but the number of women practicing medicine has increased in the last 50 years (Jagsi et al., 2006), with approximately 50% of current medical students being female (Jagsi et al., 2006). Looking at the field of obstetrics-gynecology specifically, Lambert and Holmboe (2005) found that 13% of female medical students in 1995 pursued this specialty, compared with only 5.1% of male medical students. To ensure comfort, women have typically been present during exams even before they were able to practice medicine (Balayla, 2011). Now that more women are becoming physicians, some patients still view gender-concordance as a tool to increase comfort during visits; although, the benefits of having a female gynecologist have both been supported, and challenged, in the current literature (Johnson, Schnatz, Kelsey, & Ohannessian, 2005; Makam, Saroja, & Edwards, 2010; Nolen, Moore, Rodgers, Wang, & Walter, 2016).

Various studies have supported the idea that the presence of a female gynecologist increases a patient's comfort during a pelvic exam. Zuckerman, Nvizedeh, Feldman, McCalla, and Minkoff (2002) found when choosing a gynecologist, a large majority of participants felt that the gender of the physician was as important as the physician's experience level or the cost of the visit. For these participants, they felt that female gender-concordance between a patient and their doctor was crucial in ensuring a positive environment (Zuckerman et al., 2002). The importance of physician-patient gender concordance has also been shown in strongly religious

areas as well, specifically the Middle East (Alwahaibi, Alramadhani, Alzaabi, & Alsalami, 2017; Rizk, El-Zubeir, Al-Dhaheri, Al-Mansouri, & Al-Jenaibi, 2005). While gender concordance can improve patient satisfaction, other studies show physician empathy might be a stronger predictor of patient satisfaction (Hojat et al., 2002; Kim et al., 2004).

Johnson et al. (2005) found that patient-perceived empathy, as well as expertise, were the most important factors to patients when choosing a gynecologist, beyond gender. Some research even encourages female patients to seek out male gynecologists, as they may express higher levels of empathy towards their patients (Balayla, 2011). Roter, Geller, Bernhardt, Larson, and Doksum (1999) examined this by observing medical visits from a related setting, obstetrics. Male obstetricians would continuously check that they understood the patient's concerns and devoted more time to building a partnership than female obstetricians (Roter et al., 1999). These mixed findings regarding male and female physician empathy has led current researchers to investigate the decision-making process further.

The lack of research examining the relationship between patient-physician gender concordance and patient-perceived empathy has led to unanswered questions as to what factors take precedence when patients seek a gynecologist: empathy, gender, or both. The current study evaluates both the empathy a physician exhibits and the gender of the physician, and the relative role each plays, as well as how they may interact, in the decision-making process for gynecologist choice.

Chapter 1 - Introduction

Overview of Gender Bias

Gender biases and stereotypes share a common, and prominent, existence throughout western culture. Gender stereotypes have been defined as the roles that each gender is meant to play in life, such as a woman being the nurturer and a man being the provider (Eagly, 1997). Regarding professional occupations, one can see how the role of women has changed drastically. One of the long-standing gender stereotypes regarding women in particular is that women are incapable, or less qualified, to practice medicine than men due to a variety of reasons (Crompton & Lyonette, 2011). The gender stereotypes that influence various professions have gray areas that tend to get blurred among the sexes. For example, one common gender bias regarding women is that they belong in the home to nurture the children and cook the meals for the family; yet in the realm of professional cooking, only 21% of professional chefs are female (U.S. Census Bureau, 2015). Another example of the discrepancies between misattributions of status and gender is found in education. While both men and women hold professorships at universities, the academic degrees they earned to acquire those careers are misattributed by their students. Using undergraduate students from sociology courses, Miller and Chamberlain (2000) found that students were more likely to attribute higher degrees such as a Ph.D. to their male instructors, than to a female instructor. Students were also less likely to attribute the credentials actually achieved by a female professor to that same female professor (Miller & Chamberlain, 2000). By examining these statistics overall, one could infer that society views women as subpar to men in a professional setting, regardless of their experience or background. In contrast to this phenomenon, males tend to be revered for taking on jobs that do not adhere to their typical gender roles.

When men take on societal roles that are typically considered feminine, they are often rewarded for challenging social norms. This phenomenon is referred to as the "glass escalator," where men are given more opportunities for advancement and success in areas where women are thought to typically succeed (Smith, 2012). One common example discussed by Smith (2012) are men who join the field of nursing and tend to receive promotions sooner with higher-paying jobs. There is some societal backlash from individuals on the outside of the profession, who can inherit negative views of males, frequently assuming that the male in the feminine role is weak or an inadequate provider. Sometimes individuals push through the negative backlash and adopt both feminine and masculine roles. If an individual no longer defines him or herself by specifically masculine or feminine traits, and goes beyond the dichotomous organization of psychological attributes, he or she is said to experience sex role transcendence (O'Neil, 2008). Sex role transcendence may be more adaptive to individuals who take on this view, due to the ability to flow between various roles, both masculine and feminine, and not be restricted by a certain gender role. For a male taking part in a field such as gynecology, which is focused on female medical issues, it is important to understand what favoritism, or backlash, he may receive as being part of a female-focused profession.

For those who adhere to the gender dichotomy of either identifying as male or female and expressing corresponding feminine or masculine traits, they are faced with more confounds when it comes to the different specializations of medicine. Some areas are considered more masculine, such as emergency room medicine (Nolen et al., 2016), while others are considered more feminine, for instance pediatrics (Jagsi, Griffith, DeCastro, & Ubel, 2014). In an emergency department setting, most doctors are faced with emotionally charged and turbulent situations, where the gender of the physician is not of importance during treatment (Nolen et al., 2016).

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This setting is thought to require someone who is unemotional and can take charge in stressful situations, which tends to be thought of as a more masculine role. In relation to more feminine roles in medicine, the pediatric setting is typically less turbulent and requires doctors who have a nurturing and soothing attitude towards children, especially with the presence of the child's parents during a medical visit (Bernzweig, Takayama, Phibbs, Lewis, & Pantell, 1997). A study conducted by Bernzweig and colleagues (1997) found that children communicated more about their medical concerns with a female pediatrician than with a male pediatrician. The expectations patients have of their physicians, both of their attitudes and of their gender, differ given the setting of the medical treatment.

Gender Biases in the Medical Field

In the past males have often been considered more agentic, assertive, and independent, while females are thought to be more communal, unselfish, and expressive; it would stand to reason that certain individuals would qualify for specific jobs that incorporate these particular attributes (Eagly, 1997). This translated into medical professions, some of which require various characteristics that speak to a certain gender. For example, in the realm of emergency medicine, physicians deal with traumas, frantic patients, and unexpected situations that require leadership and assertiveness (Revicki, Gallery, Whitley, & Allison, 1993). These traits, as previously discussed, are typically considered to be masculine, and male-oriented. Gynecology is often thought of as a female-specific division of medicine, as the field focuses primarily on women's health, so it would be reasonable to think that females would be more equipped to practice this division of medicine (U.S. Bureau of Labor Statistics, 2016).

In the present era, recent statistics show that these beliefs continue to be reflected in the proportion of males in both E.R. and gynecological positions respectively. Nearly 80% of active

Emergency Medicine doctors are male (Nolen et. al., 2016) and the number of males graduating from Ob/Gyn residencies has declined from 46% in 1998 to 23% percent in 2003 (Gerber & Sasso, 2006). The differences between physician genders in different medical settings becomes muddled when you include sensitive topics, such as gynecology with emergency medicine, for example. In a study conducted by Nolen and colleagues (2016), researchers found that if a patient's visit was considered "sensitive," he or she preferred to see a physician of the same gender.

Biases are ever present when women seek out physicians. Schmittdiel, Grumbach, Selby, and Quesenberry (2000) found, using members of a health maintenance organization program who are currently seeing a physician, that the majority of their female participants chose to see a female primary care physician versus a male primary care physician. In a real-world setting, some patients get to choose their physician, depending on their access to care, but it does not always mean they get the type of care they were hoping for if they opt for a gender-concordant relationship. The same study conducted by Schmittdiel and colleagues (2000) also found that the least satisfied of any of their research groups were female patients who chose female physicians, which constituted 36.4% of the 10,025-sample size. This was compared to the 12.5% of female patients who chose male physicians and were more satisfied with their quality of care. Schmittdiel and colleagues (2000) did not assess the reasons behind these differences, but their findings bring about some interesting questions. For example, what standards do female patients expect from a female physician versus a male physician?

Yanikkerem, Özdemir, Bingol, Tatr, and Karadeniz (2009) investigated some of the reasons for women's discomfort and dissatisfaction with gynecological visits and found that women preferred that the doctor be understanding and gentle, but approximately half of the

sample did not have a preference regarding whether the doctor was male or female. While the patient may state that he or she is comfortable with a male or female physician performing the exam, there are still reservations about being alone with them. According to Yanikkerem and colleagues (2009), approximately half of the sample preferred a nurse present while their doctor was performing the exam, but their level of discomfort with an examination was strongly associated with negative emotional contact with the examiner. Whether a third party is present not only influences the patient's comfort, but the gynecologist's comfort level as well.

If gynecologists do not have personal and prior experience with the exam they are performing, such as pap smears, they tend to feel a bit of anxiety and uncertainty about the expertise they have and their abilities to perform the procedure. Lurie, Margolis, McGovern, and Mink (1998) found that physicians believed they had lower levels of skill and felt less comfort when performing sex-related exams on patients of the opposite sex. More recently, it has been shown that doctors' lack of confidence performing pelvic examinations can also be due to fear of misconduct allegations and the view that women do not like these exams, so they do not have to do them (Yanikkerem et al., 2008). Male doctors do not have the personal experience to be able to relate to their patients, so they must rely on education and training. Unfortunately, with the gender biases against male gynecologists, it is hard for male medical students to receive this training. One study found only 15% of male medical students studying obstetrics-gynecology were given permission by a female patient to perform an intimate exam, versus 22% of female medical students (O'Flynn, Wass, & Rhymer, 2002).

The characteristics of the female patients who have these preferences during exams also seem to play a role in their decision-making. Older female patients are more likely to have no gender preference regarding who performs their gynecological exam, versus young patients

(Johnson et al., 2005). The experience male students may not be able to get due to these gender biases held by various patients is partly the reason why the proportion of men entering general gynecological programs is drastically decreasing (Gerber & Sasso, 2006). In order for male gynecologists to improve their rapport with female patients, they must focus on their partnership behavior and the empathy they express to patients. This requires a great deal of relevant experience and training in order to develop appropriate interpersonal skills during a sensitive medical visit. The use of college students in the present study allowed researchers to view how empathy impacts females who may have never been to the gynecologist, being that the majority of participants were freshman college students.

Patient-Physician Empathy

Empathy is a concept that has been constantly scrutinized in regard to its definition and its application to the medical field. Hojat et al. (2002) defined empathy as having two domains, affective and cognitive. The affective domain is an individual's ability to join in on the feelings of another person, while the cognitive domain is an individual's capacity to view the world from the patient's perspective and understand his or her inner experiences (Hojat et al., 2002). These reactions may stir internal strife in a medical setting, so it is important for physicians to develop a level of detachment to allow for objective diagnoses and treatments for the patient, which Hojat and colleagues (2002) referred to as "compassionate detachment" (p. 1563). Reactivity and awareness of another person's feelings is crucial to developing a solid relationship with a patient. One of the most important tools to being a successful doctor is to exhibit good bedside etiquette, which enables patients to open up and be honest about their health. It also allows them to build a good rapport with their physician. Numerous studies have reported the benefits of an empathetic relationship between physicians and their patients. Kim, Kaplowitz, and Johnston (2004)

examined the relationship from the patient's point of view, defined as patient-perceived empathy, and found that when the patient felt understood and accepted by his or her physician, the level of satisfaction with the medical visits and compliance with the physician increased. Patient-perceived empathy is a crucial element in maintaining a positive and beneficial relationship between a patient and physician (Howgego, Yellowlees, Owen, Meldrum, & Dark, 2003). Fortunately, a physician's ability to develop a strong empathic relationship with his or her patient can be trained.

Although empathy is often conceptualized as trait based, it can be trained to apply in the medical setting where "compassionate detachment" is required of most physicians (Hojat et al., 2002). Seaberg, Godwin, and Perry (2000) sought to help develop empathetic skills in emergency medicine physicians by implementing a new training program. The training program involved 25 medical residents experiencing an emergency room visit from the patient's perspective. Residents were given a clinical scenario, such as experiencing lower back pain, and were asked to register with a nurse and then wait for the physician. After being seen, the residents were given the medical bill and asked if this amount, as well as the time they waited, were fair. Results showed that the physician-patient empathy significantly improved among residents, as reported by the follow-up self-report questionnaires, and was practical in increasing patient care attitudes.

There are some gender differences when it comes to a physician's ability to build an empathic relationship with patients. Fields et al. (2011) gave male and female medical students the Jefferson Scale of Physician Empathy (JSPE), which was adapted to measure empathy among medical students using a scale from 20-140, and found that women had statistically significant higher levels of overall empathy ($M = 112.5$) than males ($M = 104.1$), ($r^2 = .65$).

Other research on gender differs on empathy, though, when accounting for other factors. Communication between a physician and patient helps to build strong professional relationships but is often affected by the patient's level of health literacy.

Patients who discuss various medical topics with their physicians typically are not as literate, in regard to medical terms, as their physician counterparts (Safeer & Keenan, 2005). In order to communicate with their patients in a positive and informative way, physicians must be able to relay their information using a method the patient will understand. When looking at a younger population, this holds true. Undergraduate college students, for example, who are not nursing majors, have lower scores of health literacy compared to nursing majors; yet the majority of all students visit the doctor on a regular basis (Joseph, Fernandes, Hyers, & O'Brien, 2016). When an individual has low levels of health literacy, research shows that by focusing on improving physician-patient empathy skills, physicians can reduce the negative outcomes associated with low health literacy (Chu & Tseng, 2013). The comfort patients have with their doctors may not come from the knowledge they possess, but rather from the empathy a patient perceives from the physician (Chu & Tseng, 2013). The current study took this into account by administering a health literacy questionnaire and examined the differences between the gender and empathy conditions when health literacy was controlled.

Research that has been conducted on the empathy levels of physicians across gender and medical specialties have produced mixed results. Hojat and colleagues (2002) showed that female physicians across all specialties scored marginally higher on an empathy measure than male physicians did, and Cooper-Patrick et al. (1999) found that female physicians were more participatory with their patients than male physicians were. In contrast to these findings, Roter, Geller, Bernhardt, Larson, and Doksum (1999) looked specifically at the field of obstetrics-

gynecology and showed that when visiting with their patients, male obstetricians conducted longer visits and engaged in more facilitative communication, making statements of concern or of their partnership, compared to female obstetricians. Roter and Hall (2004) also found that male physicians in primary care exhibit more emotionally focused discussions with their patients than female physicians do. Due to the fact that prior research on this has been mixed, more research is needed to better understand the relationship between gender-concordance and patient-perceived empathy when a patient chooses a gynecologist.

Impact of Empathy on Physician Choice

The interplay between gender-concordance and physician choice, as well as empathy and physician choice, has been widely studied by researchers, but the results for either relationship continue to be inconsistent. This inconsistency may be due to the influence of empathy on gender-concordance and physician choice, as empathy and gender are often confounded with one another. Very few studies have examined the influence empathy could have on a patient's preference for a particular gendered doctor in the field of gynecology. One study that has examined this was conducted by Schnatz, Murphy, O'Sullivan, and Sorosky (2007), who found that the majority of female participants ($n = 706$) chose a female gynecologist out of the entire sample ($N = 854$), but a significant portion ($n = 545$) of the entire sample changed their answer to a male gynecologist when the male gynecologist was described as having humanistic qualities, including empathy. These inconsistent findings regarding gender and empathy preference were addressed in the current study to continue bridging the gap between empathy and gender. Researchers presented female participants with a variety of manipulated options as to which gynecologist they would rather see for their annual exam and incorporated both empathy and

gender variables in the study to see what interaction, if any, occurs when choosing a gynecologist.

Researchers have operationally defined empathy as fictional, but realistic reviews of the hypothetical gynecologists either speak highly of their patient-physician empathy or discuss the lack-thereof. To indicate empathy, researchers incorporated statements that refer to three methods of expressing empathy: nonverbal behavior, acknowledgement of the patient, and comfortability. A visual representation will also be present that shows a low or high rating of bedside manner for the physician. The gynecologists' profiles were controlled for education, age, and experience, and did not include pictures or their race, as racial concordance between a patient and a physician has been shown to have an effect on patient satisfaction (Cooper-Patrick et al., 1999).

Primary Hypotheses

Based on past literature regarding patient-perceived empathy and gender concordance in the gynecological field, the following hypotheses were developed. The following hypotheses were assumed after controlling for the participants' experience with gynecological exams, as well as their health literacy.

H1: It is hypothesized (H1) that there will be a main effect for gender such that female gynecologists will be rated higher in their overall likelihood scores compared to male gynecologists.

Rationale: When empathy is collapsed across conditions, and only gender is manipulated, past research shows that if they have to make a choice, most females with no experience with gynecological exams will choose a female physician (Makam, Saroja, & Edwards, 2010).

H2: It is hypothesized (H2) that researchers will find a main effect for empathy such that gynecologists with high empathy levels will be rated higher in their overall likelihood scores than compared to gynecologists with low empathy levels.

Rationale: When gender does not play a part in the decision-making process, research shows that patients prefer to be seen by a physician with high levels of empathy (Kim, Kaplowitz, and Johnston, 2004)

Exploratory Hypothesis

H3: It is hypothesized (H3) that when researchers are examining the relationship between gender and empathy, there will be an interaction. It is expected that when empathy is low for both male and female gynecologists, the female gynecologist would have higher likelihood scores. However, when empathy is high for both male and female gynecologists, there would be no significant difference in the likelihood ratings.

Rationale: Past research states that empathy is an important factor in choosing a physician, so researchers believe that it will influence the participant to go with the physician who has the better bedside manner, regardless of gender (Balayla, 2011; Kim et al., 2004). There is also the finding that if the physician is a female and is also very empathetic, the participant chooses this gynecologist (Kim et al., 2004; Makam et al., 2010). Finally, there is some research that shows that gender-concordance is one of the most important factors when choosing a gynecologist, due to the embarrassment or uneasiness of being seen by a male doctor (Rizk et al., 2004; Zuckerman et al., 2004).

Chapter 2 - Method

Participants

The study used a sample size of 79 participants, with approximately 10 participants in each of the eight conditions. The participants were comprised of Radford University female undergraduate students recruited through the SONA system. Students who took the Introductory Psychology course at Radford University were required to participate in research through SONA and received class credit from their course instructor for research participation. These students had to be 18 years old in order to participate. Students also had to be able to speak and write fluently in English. The data collection took approximately two and a half months. Following data collection, the participants' ages were mostly 18 (23%) and 19 (22%) years old, and the race of the sample was representative of the Radford population with 35.4% of the sample identifying as Black or African American, and 53.2% identifying as white. As expected with class standing, 91.1% of the sample identified as having completed high school or some college. Interestingly, an approximately even amount of the sample had or had not had a gynecological exam (Yes: 54.4%; No: 43.0%); in addition, the majority of participants had never picked a physician (Yes: 34.2%; No: 58.2%). Overall demographics of the participants and average health literacy scores are presented in Table 1.

Measures

Demographics Survey. After agreeing to the informed consent, a brief demographics survey was given at the onset of the study. This survey asked participants to indicate their race, age, class standing, and if they had any past history of receiving a gynecological exam or had picked a physician. A gynecological exam was defined in basic, layman's terms, as receiving a pap exam and/or a pelvic exam, to not confuse the participant.

Physician Profiles. Two profiles were administered to the participant, simultaneously, and the submit button to continue was not present until 2 minutes after the presentation. This allowed participants to carefully look at the profiles and thoughtfully answer the questions below. Each of these profiles included the doctor's name, which was of a neutral origin, years of experience, education, and gender (see Appendix A). This information was the same between the profiles, as to not influence the decision-making process. The pictures of the doctors were not provided, but a black silhouette of either a woman's or a man's head was present. The profiles included reviews from previous "patients" whose comments varied depending on the condition. They either spoke highly of the doctor's patient-physician empathy or discussed the lack thereof.[1] The reviews stated that the individual was very educated, regardless of empathy level, and consisted of the same three themes: nonverbal behaviors, patient acknowledgement, and patient comfortability. There was also a bar graph showing the gynecologist's overall ratings, including bedside manner, competence, and the physician's facility. The last two categories, competence and facility, were the same for all conditions, but the bedside manner was either high or low.

Manipulation Check. To ensure that participants paid adequate attention to the physician profiles, a manipulation check was administered. The correct answers for these questions will differ, based on the condition the participant is in. Analyses showed that the majority of participants (87.3%) passed the manipulation check. After running an independent samples t-test between the likelihood scores from those who did and did not pass the manipulation check, researchers found no significant difference between the two groups, $t(77) = -0.33$, $p = 0.74$. Therefore, those who did not pass the manipulation check (12.7%) were included in the final analyses.

Patient Satisfaction. Upon completion of the manipulation check, participants answered three questions regarding each physician. They rated how likely they were to choose either gynecologist, how confident they felt about their decision-making, and how satisfied they were with their choice (e.g., "How confident are you in your choice of physician?" and "How satisfied are you with your choice?"). These questions were answered using a nominal rating scale, with 1 being very unconfident/unsatisfied/unlikely to 7 being very confident/satisfied/likely. These three ratings for each physician were combined into one overall likelihood score for each physician, due to their strong reliability. Likelihood for Physician 1 ($M = 5.1$, $SD = 1.74$) item reliability was $\alpha = .90$; Likelihood for Physician 2 ($M = 4.63$, $SD = 1.81$) item reliability was $\alpha = .95$.

OBGYN Medical Term Definitions. Following the satisfaction ratings, participants were asked to match eight medical terms to their appropriate definition. These terms were *Birth Control, Cervix, Menstrual Period, Pap Exam, Pelvic Exam, Speculum, Vagina,* and *Vulva.* The definitions for each of these terms were taken from the American College of Obstetricians and Gynecologists (2017) frequently asked questions regarding a teen's first gynecological visit. This measure was scored as the total number of terms that participants were able to match correctly to their definitions (0-8). The Chronbach's alpha showed a strong item reliability for this measure, $\alpha = .76$. This portion of the experiment was online as well.

Rapid Estimate of Adult Literacy in Medicine – Short Form (REALM-SF). At the end of the online survey, the participant was required to complete the REALM-SF in-person to gauge the participant's level of general health literacy (Arozullah et al. 2007). The full version of the REALM has a Chronbach's alpha of .98, and the short form is highly correlated with the full version ($r = .94$, $p < .001$). This required the participants to recite, out loud, seven medical terms:

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Behavior, Exercise, Menopause, Rectal, Antibiotics, Anemia, and *Jaundice*. If they were not able to pronounce any, they were assumed to be unable to read most low-literacy materials and needed repeated oral instruction. If they correctly stated 1-3 of the words, they were assumed to need low-literacy materials and may not be able to read prescription labels. Four to six words correct meant they would struggle with most patient education materials, but would not be offended by low-literacy materials. If they got all seven correct, this indicated that they were able to read most patient education materials and had at least a high school level understanding of medical terms. The researcher scored as the participant was reciting the terms. The participant could get anywhere from 0-7 items correct.

Procedure

The majority of this study was completely online for participants. Researchers required that participants come to a research lab to complete the study, after they signed up to take part in the study through SONA. The SONA system is mostly used at Radford University to recruit undergraduate students who are taking psychology courses. The computers in the computer lab were loaded with the experiment, which was completed using Qualtrics. Two research team members were present, one in the online testing area to help with any procedures, and one in a separate room to administer the REALM-SF and to debrief the participant. As they began the survey, participants were electronically provided with an informed consent form that they had to sign in order to continue with the study. If they did not give consent, they were unable to continue. The participant criterion included that the participant identified as female, spoke English, and was at least 18 years old. The informed consent also included the principal investigator's contact information if participants had any questions or concerns with the study.

After completing the informed consent, the participant was provided with a brief demographics survey.

Upon completing the demographics survey, the participant was instructed to watch the next screen carefully and pay attention to the hypothetical gynecologist profiles. There were two profiles of hypothetical doctors, placed side-by-side, in order to avoid any time-order biases. The profiles were set to stay on the screen until the participant answered all the questions below, and after it had been 2 minutes. This allowed participants to answer questions thoughtfully and honestly. The presentation of which profile was shown on the left or right, as well as which condition was present, was randomly counterbalanced to avoid any order effects. The manipulation check was shown underneath the profiles, as was the patient satisfaction questionnaire. The manipulation check assessed whether the participant paid adequate attention to the physician profiles. They were asked to answer two questions regarding each physician (e.g., "What gender was physician #1/#2?" and "What was the star rating of physician #1/#2?").

After completing the manipulation check, the participants answered the patient satisfaction questionnaire asking how likely they would choose either gynecologist, how confident they were in their choice of either gynecologist, and how satisfied they were with either choice. Upon completion of their ratings, participants were directed to another page and were provided with eight definitions of common OBGYN visit medical terms. They were asked to match each term to its appropriate definition, with only one correct definition for each of the medical terms. The medical terms were all related to women's health and are recommended by the American College of Obstetricians and Gynecologists as terms women should be familiar with before their first gynecological exam. Upon completion of this questionnaire, the online portion of the study was completed, so participants were directed to a separate room to complete

the REALM-SF in-person. These sessions were done in a small conference room located near the computer lab. When the participants entered the room, they were asked to complete the REALM-SF, using the suggested introduction that is provided on the score sheet. After completion, the participants were debriefed on the study's intentions and thanked for their participation. They received SONA credit online once they were debriefed. The approximate time to complete all components of this study was about thirty minutes.

Chapter 3 - Results

Before researchers could run analyses, they had to clean the data. Starting out with 84

participants, researchers had to eliminate 5 from the sample as they did not have an ID number

on their online survey to match with their in-person REALM. After cleaning, researchers first

looked at the covariates: the REALM-SF and the OBGYN medical terms. The scores for each

were determined to be significantly correlated with each other ($r = .35$, $p = .001$). Levels of

health literacy using the REALM-SF and the OBGYN medical term matching exercise showed

that the majority of participants had at least a high school understanding of medical materials as

shown by the REALM ($M = 6.52$, $SD = 0.75$), and on average, participants answered the

majority of the OBGYN medical terms correctly ($M = 5.99$, $SD = 1.91$).

Demographic and Covariate Relationships

Researchers ran one-way ANOVAs to investigate whether there were any significant

relationships between participants' demographics and their likelihood ratings of the

gynecologists, as well as their levels of health literacy. A one-way ANOVA was run between

each of the demographic variables, and their corresponding likelihood ratings of each physician,

as well as their scores on the REALM-SF and the OBGYN medical terms. Results showed that

none of the demographics were significantly related to either of the dependent measures of

likelihood or health literacy. A bivariate correlation was also run between participants' scores on

the health literacy measures, REALM-SF and OBGYN medical term matching, and their ratings

of each physician. Results showed a significant relationship between the REALM-SF and the

OBGYN medical terms exercise, $r = .35$, $p = .001$. This correlation was a moderately strong,

positive relationship, so as scores on the REALM-SF increased, the OBGYN scores increased as

well. A significant relationship was also found between the likelihood scores for Gynecologist 1

and Gynecologist 2 in each of the conditions, $r = -.42$, $p < .001$. This relationship was shown to be a moderately strong positive correlation, so as scores for one physician increased, the other physician's scores decreased. This relationship makes sense in the fact that every condition had both a male and female gynecologist, and the empathy levels were influencing how participants compared each of the physicians (see Table 2).

Overall Model

For this study, researchers analyzed participants' responses to the patient satisfaction questionnaire across the conditions they were in, as well as which gendered physician was presented first. This comparison was made using a 2 x 2 x 4 (Order [Female First, Male First] x Gender [Female, Male] x Empathy [MHFH/FHMH, MLFH/FHML, MHFL/FLMH, MLFL/FLML]) Repeated Measures MANCOVA. The first factor investigated the likelihood ratings of the physician presented first, either the male or the female gynecologist; this factor was between-subjects. The second factor investigated the ratings between male and female gynecologists, which was a within-subjects investigation. The third factor used in the analysis looked at the different empathy conditions that the participant was in; these four conditions can be seen in Table 3 and were evaluated as between-subjects. The average ratings for the physicians across conditions can be seen in Table 4.

First, the main effects were evaluated. Gender (F: $M = 5.72$, $SE = .13$; M: $M = 4.24$, $SE = .16$) was shown to have a significant effect, such that Females were rated higher in likelihood than Males, $F(1, 70) = 6.97$, $p = .01$, partial $\eta^2 = .09$. Empathy also had a significant main effect such that physicians who both had high empathy were rated higher overall in likelihood compared to physicians in any of the other groups (FHMH/MHFH: $M = 5.84$, $SE = .19$, FHML/MLFH: $M = 4.64$, $SE = .18$, FLMH/MHFL: $M = 4.94$, $SE = .18$, FLML/MLFL: $M = 4.49$,

SE = .19), *F*(3, 70) = 10.39, *p* < .001, partial η^2 = .31. However, there was no significant main effect for Order (Female First: *M* = 4.89, *SE* = .14, Male First: *M* = 5.06, *SE* = .13), *F*(1, 70) = 0.75, *p* = .39, partial η^2 = .01.

After running the MANCOVA, researchers did not find a significant three-way interaction between the factors, *F*(3, 70) = 0.11, *p* = .95, partial η^2 = .01. Two-way interactions were also evaluated. The interaction between Order and Gender was not significant, *F*(1, 70) = 1.26, *p* = .27, partial η^2 = .02; as was the interaction between Order and Empathy, *F*(3, 70) = 0.43, *p* = .73, partial η^2 = .02. Researchers did, however, find a significant two-way interaction between Gender and Empathy; those results are described below. Interactions and main effects can be seen in Table 5.

Physician Ratings and Condition Interaction

A significant two-way interaction was found between Gender and Empathy, *F*(3, 70) = 24.83, *p* < .001, partial η^2 = .52. Overall differences between conditions can be seen in Figure 1. Upon further analyses using Paired Comparisons post hoc tests, the MANCOVA results showed significant differences between the likelihood ratings for Male and Female physicians, and which condition they were in (see Table 6). Male physicians with low empathy (*M* = 2.70, 3.67, *SE* = 0.31, 0.32) scored worse when compared to Females with high or low empathy (*M* = 6.59, 5.31, *SE* = 0.25, 0.25). When high empathy males (*M* = 5.58, *SE* = 0.31) were compared to low empathy females (*M* = 4.30, *SE* = 0.25), though, they received higher ratings. All individual comparisons were made using an independent samples t-test, and the reported comparisons are significant at the 0.001 level. The results also showed a large effect size (η^2 = .52), which shows that the manipulation accounted for 52% of the variance that is involved in choosing a gynecologist.

Chapter 4 - Discussion

As previously described, researchers had proposed three hypotheses based on prior research: 1) After collapsing across empathy, participants will report female gynecologists as more likely to be chosen, and report greater satisfaction and confidence with their possible choice, compared to choosing a male gynecologist; 2) After examining the differences between conditions, participants will report physicians with high levels of empathy as more likely to be chosen, and report greater satisfaction and confidence with their possible choice, than physicians with low empathy; and 3) There will be an interaction between gender and empathy of the physician, such that female physicians with high levels of empathy will be rated highest overall. Findings from the study provided support for each hypothesis.

Hypotheses Findings

In agreement with the first hypothesis, researchers found a main effect for gender, in that female physicians were rated significantly higher overall when compared to male physicians. This effect was predicted by past literature that stated the importance of gynecologist-patient gender concordance for women who were inexperienced with gynecological exams and were of a young age (Balayla, 2011; Makam, Saroja, & Edwards, 2010; Zuckerman et al. 2002). However, this finding was not supported across conditions, such that empathy also significantly impacted physician selection. A main effect for empathy, in accordance with the second hypothesis, was found. Physicians with high empathy were consistently rated higher on likelihood than those with low empathy. One empathy comparison showed that female physicians with low empathy who were paired with male physicians with high empathy were rated significantly lower in likelihood. Female physicians with low empathy who were compared to male physicians with low empathy had significantly higher ratings. These results were

hypothesized in accordance with past literature discussing the importance of patient-perceived empathy (Kim Kaplowitz, & Johnston, 2004; Seaberg, Godwin, & Perry, 2000; Schnatz et al., 2007).

For the third exploratory hypothesis, researchers found intriguing results. When examining the three-way interaction between order, gender, and empathy, researchers did not find significant results. Looking more in-depth at the analyses, though, researchers found a significant interaction between gender and empathy. Specifically, researchers saw that participants actively used their decision-making skills to look at both the gender concordance and empathy levels of the physician. One instance of this comparison was when a female physician with low empathy was compared to a male physician with high empathy. When a participant was in this condition, she gave a significantly higher likelihood rating to the male gynecologist than to the female gynecologist. These results seem to provide some evidence that female gynecologists are rated higher regardless of their empathy levels, but when they are compared to a male gynecologist who has high levels of empathy, participants rate the female doctor lower than the male doctor. Past research has hinted at this possible interaction, but lacked empirical observation (Schmittdiel, Grumbach, Selby, & Quessenberry, 2000; Schnatz et al., 2007).

The expected covariate of health literacy, as measured by the REALM-SF and the OBGYN medical term questionnaire, did not have a significant influence on the outcomes as previously hypothesized. This may have been due to a number of reasons, one of which being that researchers may not have used the most up-to-date health literacy measure, or that the hypothetical gynecologist profiles did not reflect the discussions that typically ensue during a visit. Health literacy may only become a factor after the patient has committed to a physician and

comes in for a visit (Williams, Davis, Parker, & Weiss, 2002). Another factor influencing health literacy was also one's past experience with gynecological exams. According to the Centers for Disease Control and Prevention, females do not have to undergo a gynecological exam, specifically pap testing, until the age of 21, regardless of the onset of sexual activity (2013). The sample used in this study was made up of females approximately 18 years old, so participants may not have been as familiar with medical terminology, since they had not yet visited the gynecologist.

Overall, the research supported the hypotheses predicted by researchers. Of special note were the findings regarding the exploratory hypothesis, as the interaction between patient-gender concordance and patient-perceived empathy had not been examined previously. Results showed that when making comparisons, the ratings prospective patients give a gynecologist is dependent on to whom they are comparing that doctor. If gender concordance was their primary decision-making factor, then the empathy levels of a male gynecologist should not influence their ratings of the female gynecologist, but as results showed, empathy did play a part in the participants' decision-making.

Limitations and Future Directions

With any research, there are some limitations about the current study that must be mentioned. First, researchers did not collect data regarding the participants' gender identity or sexual orientation. With society's gradual cultural shift toward inclusion and acceptance of all genders, researchers did not analyze differences among participants with different gender identities as the sample size was rather small. Future research should acknowledge this population of individuals and possibly investigate whether gender concordance still plays a part in the analyses for those who identify as transgender or gender fluid. Second, we had to develop

our own methods for expressing empathy with the gynecologist profiles by using hypothetical patient reviews, as there were no other methods previously mentioned in the literature. Additional research should use these vignettes to corroborate this study's findings.

In regard to generalizability, this research used college-aged students who had limited gynecological experience and were also located in a rural college town. These results may have been due to such influences, so future researchers should implement this study in various geographical locations and with different populations, such as women from low socioeconomic status, older women, and more experienced women. This research did invoke a strong sense of ecological validity for the population at hand, as the profiles were very similar to the Google reviews that women search on the Internet. What is of interest, though, are women who have no choice in their gynecologist, or do not have the means to search for a doctor on a computer. Large portions of women fall under these limitations, and so researchers should change this study to reflect this boundary for this certain population. The internal validity of this study could be strengthened as well, as there are many factors that are involved in choosing a gynecologist. One widescale influence towards these results could be a bias of history. Society today is becoming more inclusive and accepting of individuals who define themselves outside of societal boundaries. The results researchers found, though, reflected an adherence to the discomfort that occurs among young women being examined by a male. Now that more women are entering the medical field, patients seem to be more inclined to be seen by a female physician for sensitive visits, such as with gynecology. Future researchers should look more at participants' beliefs regarding women and men in the medical field, as well as have participants write out why they did or did not choose either doctor.

Implications for Patient-Physician Awareness

Although this research may have had some drawbacks, overall it took a novel approach to two concepts that had not been integrated: patient-perceived empathy and gender concordance relative to gynecologist choice. Patient-perceived empathy and gender concordance are components that play a major part in a patient's decision-making process, but have rarely been studied together. This research used an innovative method to investigate the relationship between these variables and how they shape a woman's choice of a gynecologist. By creating hypothetical gynecologist profiles, the decision-making process was more realistic to what patients would be using when choosing their own doctors. These results are also especially important in educating future gynecologists, as well as physicians in general, of the biases that patients may hold, and for them to work on improving the skills that they can control, such as using the training exercise used to improve empathy in physicians created by Seaberg and colleagues (2000). Young women who start college and begin to develop into functional, independent contributors to society should become aware of the factors that influence their decision-making as they find doctors for themselves. By becoming more aware of these factors, young women can extend beyond surface level qualities to make thoughtful, educated decisions about who medically treats them.

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Note

[1]The reviews written on the physician profiles were controlled across conditions. Those with high empathy and were the same gender had the same prompt, as was the same for those with low empathy and were the same gender. The prompts were not the same across gender, though, as to ensure realism. Researchers used the Barrett-Lennard Relationship Inventory: Form OS-64Couns (1962) as a reference towards empathetic behaviors and thoughts on behalf of the patient. This is how researchers were able to include nonverbal behaviors, comfort levels, and acknowledgement as the three major themes of the hypothetical patient reviews.

Table 1

Participant Demographics

Demographic	Subsections	*n*	*%*	*M*	*SD*
Age	18	23	29.1		
	19	22	27.8		
	20	15	19.0		
	21	9	11.4		
	22+	10	12.7		
Race	Black or AA	28	35.4		
	White	42	53.2		
	Other	9	12.4		
Schooling Completed	High School	26	32.9		
	Some College	46	58.2		
	Associate	5	6.3		
	Bachelor's	2	2.5		
Gynecological Experience	Yes	43	54.4		
	No	34	43		
Picked a Physician	Yes	27	34.2		
	No	46	58.2		
REALM-SF				6.52	0.75
OBGYN Medical Term				5.99	1.91

Note. This table reflects the frequencies of the various demographics, as well as the average health literacy scores on the REALM-SF and the OBGYN medical term questionnaire for participants.

Table 2

Correlations between Health Literacy and Likelihood Ratings

	REALM-SF	OBGYN Medical Terms	Likelihood Physician #1	Likelihood Physician #2
REALM-SF	-			
OBGYN Medical Terms	0.35*	-		
Likelihood Physician #1	0.10	0.35*	-	
Likelihood Physician #2	-0.07	-0.17	-0.42*	-

Note. *Indicates significance at the .001 level. This table shows that the likelihood ratings between physician #1 and physician #2 were negatively correlated, being that at all times one was male and the other female, and as one's ratings were high, the other's were low. The table also shows that as expected, the scores on both the OBGYN medical terms questionnaire and the REALM-SF were significantly, positively correlated.

Table 3

Presentation of Physician Profiles with Number of Participants (*N* = 79)

	High Empathy	Low Empathy	Total
High Empathy	MH/FH (*n*=10) FH/MH (*n*= 9)	MH/FL (*n*=10) FH/ML (*n*=10)	39
Low Empathy	ML/FH (*n* = 10) FL/MH (*n* = 10)	ML/FL (*n* = 12) FL/ML (*n* =8)	40
Total	39	40	*N* = 79

Note. "H" indicates high empathy and "L" indicates low empathy; the dependent variables are Physician choice, Level of Satisfaction with choice, and Level of Confidence with choice. After controlling for the covariates health literacy and past gynecological experience, researchers presented the same gender with alternating empathy levels (High or Low), for both male and female physicians to show a possible main effect for empathy. Researchers also used the same empathy with alternating genders to show a feasible main effect for gender. In order to show a viable interaction, researchers presented alternating genders with alternating empathies, for example, a male high in empathy with a female low in empathy.

Table 4

Average Ratings of Gynecologists in each Condition

Condition	Physician Gender	*n*	*M*	*SE*
FHMH/MHFH	Female	19	6.68	0.25
	Male		5.01	0.32
FHML/MLFH	Female	20	6.59	0.25
	Male		2.70	0.31
FLMH/MHFL	Female	20	4.30	0.25
	Male		5.58	0.31
FLML/MLFL	Female	20	5.31	0.25
	Male		3.67	0.32

Note. This table reflects the differences in likelihood scores for male and female gynecologists who had either high or low levels of empathy, depending on their condition. Comparisons across conditions show that ratings for the same physician differed depending on to whom they were being compared.

Table 5

MANCOVA Table - Main Effects and Interactions

Factor	Level	M	SE	$F(1, 70)$ Between $F(3, 70)$ Within	p	η^2
Order	Male First	5.06	0.13	0.75	.39	.01
	Female First	4.89	0.14			
Gender	Male	4.24	0.16	6.97	.01	.09
	Female	5.72	0.13			
Empathy	FHMH/MHFH	5.84	0.19	10.39	< .001	.31
	FHML/MLFH	4.64	0.18			
	FLMH/MHFL	4.94	0.18			
	FLML/MLFL	4.49	0.19			
Order*Gender				1.26	.27	.02
Order*Empathy				0.43	.73	.02
Gender*Empathy				24.83	< .001	.52
Order*Gender*Empathy				0.11	.95	.01

Note. This table shows the significant main effects and interactions. Gender*Empathy was the only significant two-way interaction, and the main effects for each were also significant. The main effect of order, as well as the other two-way interactions and the three-way interaction, were not significant at the .05 alpha level.

Table 6

Paired Comparison Post Hoc: Likelihood Ratings and Condition

	FHMH	FHML	FLMH	FLML	F (3,75)	η^2
Female Likelihood	6.68_c^b (0.25)	6.59_c^b (0.25)	4.30_a^a (0.25)	5.31_b^b (0.25)	21.67	0.46
Male Likelihood	5.01_b^a (0.32)	2.70_a^a (0.31)	5.58_c^b (0.31)	3.67_a^a (0.32)	17.01	0.40

Note. This table shows the average ratings for each physician across the conditions presented, as well as the standard error for each mean. Subscripts refer to significant differences in rows across the conditions. Superscripts refer to significant differences in columns between likelihood ratings for genders of physicians. All differences between means are significant at the .001 level.
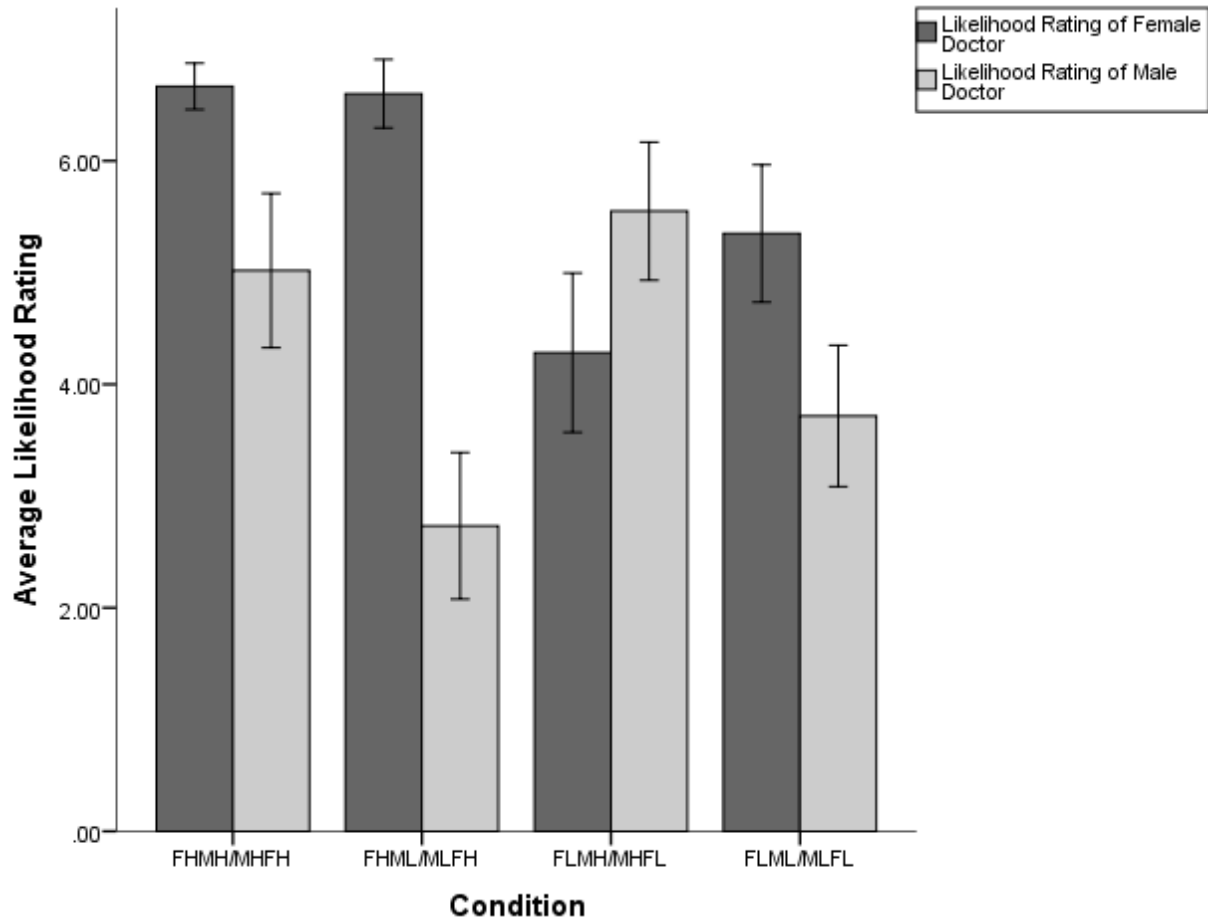
Figure 1. Likelihood ratings for male and female gynecologists across conditions. Average

likelihood ratings for each physician, male or female, are shown across the conditions.

Significant differences were found between the ratings of male physicians and female

physicians, resulting from which condition they were in. Confidence Intervals are represented in

the figure by the error bars attached to each column.

Appendix A

Gynecologist Profiles

Female Gynecologist – High Empathy   Male Gynecologist – High Empathy

M. Jones, MD

Background

Years of Experience: **15 years**

Gender: **Female**

Age: **45 years old**

Education:
University of North Carolina, School of Medicine - Doctor of Medicine
- *Specialty:* **OB-GYN**

Patient Reviews

Most Agreed Upon Review

"Dr. Jones always acknowledges any and all of my healthcare concerns. She is always focused on her patients' needs and makes them feel comfortable. Her expertise makes her a competent gynecologist."

Overall Average Ratings

Physician Rating

■ Bedside Manner ■ Competence ■ Facility

C. Johnson, MD

Background

Years of Experience: **15 years**

Gender: **Male**

Age: **45 years old**

Education:
University of North Carolina, School of Medicine - Doctor of Medicine
- *Specialty:* **OB-GYN**

Patient Reviews

Most Agreed Upon Review

"Dr. Johnson is a very experienced and skillful doctor. During our visits, he always makes me feel relaxed and gives me his undivided attention. He genuinely cares to understand my healthcare concerns."

Overall Average Ratings

Physician Rating

■ Bedside Manner ■ Competence ■ Facility

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Gynecologist Profiles

Female Gynecologist – Low Empathy   Male Gynecologist – Low Empathy

M. Jones, MD

Background

Years of Experience: **15 years**

Gender: **Female**

Age: **45 years old**

Education:
University of North Carolina, School of Medicine - Doctor of Medicine
- *Specialty:* **OB-GYN**

Patient Reviews

Most Agreed Upon Review

"When I visit Dr. Jones, our discussions always seem rushed, which makes me uncomfortable. She does not acknowledge my healthcare concerns. However, she is an experienced and capable gynecologist."

Overall Average Ratings

Physician Rating

■ Bedside Manner ■ Competence ■ Facility

C. Johnson, MD

Background

Years of Experience: **15 years**

Gender: **Male**

Age: **45 years old**

Education:
University of North Carolina, School of Medicine - Doctor of Medicine
- *Specialty:* **OB-GYN**

Patient Reviews

Most Agreed Upon Review

"During our visits, I feel that Dr. Johnson is always distracted and does not understand my healthcare needs. He makes me feel uneasy during our visits, but he is a very knowledgeable and skilled gynecologist."

Overall Average Ratings

Physician Rating

■ Bedside Manner ■ Competence ■ Facility

Appendix B

Informed Consent – Online

Researcher(s): Dr. Jenessa Steele, Dr. Nicholas Lee, Victoria Dunsmore, Amanda Chappell, Rachel Scott, Morrgan Duncan, and Rachael Harasink

We ask you to be in a research study designed to evaluate females' health care provider choices. If you decide to be in the study, you will be asked to examine hypothetical physician profiles and answer questions about your preferences for each based off the information provided; this should take approximately thirty minutes. About 96 people from the female population will be asked to participate in the study.

This study has no more risk than you may find in daily life.

There is no compensation from being in this study; however you may receive course credit from your psychology instructor for participating in this study.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you must respond to all questions presented. If you decide you no longer wish to participate, you may exit the study browser at any time without penalty or loss of benefits.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. You will be presented with an ID code; this code will be linked to your information, but will not be linked to you in any way. If we present or publish the results of this study, your name will not be linked in any way to what we present.

If at any time, you have questions, you may contact Dr. Jenessa Steele.

If you have questions now about this study, ask before you sign this form.

If you have any questions later, you may talk with Victoria Dunsmore who can be reached by email at vdunsmore@radford.edu.

If this study raised some issues that you would like to discuss with a professional, you may contact Dr. Jenessa Steele at jcsteele@radford.edu (540) 831-5176 or Victoria Dunsmore at vdunsmore@Radford.edu.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Laura J. Jacobsen, Interim Dean, College of Graduate Studies and Research, Radford University, ljacobsen@radford.edu, 1-540-831-5470.

It is your choice whether or not to be in this study. What you choose will not affect any current or future relationship with Radford University.

Appendix C

REALM-SF Score Sheet

REALM-SF Score Sheet

Patient ID #: _____   Date: _____   Examiner Initials: _____

Behavior   _____

Exercise   _____

Menopause   _____

Rectal   _____

Antibiotics   _____

Anemia   _____

Jaundice   _____

TOTAL SCORE _____

Administering the REALM-SF:

Suggested Introduction:

"Providers often use words that patients don't understand. We are looking at words providers often use with their patients in order to improve communication between health care providers and patients. Here is a list of medical words.

Starting at the top of the list, please read each word aloud to me. If you don't recognize a word, you can say 'pass' and move on to the next word."

Interviewer: Give the participant the word list. If the participant takes more than 5 seconds on a words, say "pass" and point to the next word. Hold this scoring sheet so that it is not visible to the participant.

Appendix D

Debriefing Statement

Thank you for participating in this study. We appreciate your time and effort while completing all questionnaires.

If you found any part of this study upsetting, or have any questions regarding the research being conducted, you can contact the principal investigator, Dr. Jenessa Steele at jcsteele@radford.edu, or the graduate assistant, Victoria Dunsmore at vdunsmore@radford.edu.

We want to remind you that all of your information, including answers to the questionnaires, will be kept confidential. This information will never be linked to you in any way. Also, all researchers are bound by confidentiality and will never discuss your participation.

We do ask that you not share the details of this study with other students who may participate in the future. Your participation and that of other students will contribute to a greater understanding of women's preferences for physicians.

You will receive your SONA credit in the near future. If you have any questions, feel free to ask us. Thank you again for your time and participation.

Appendix E

Manipulation Check

For the following questions, please try to respond to each question as accurately as possible.

What was the gender of physician #1 (the one on the left)?

- o   Male

- o   Female

What was the lowest rated quality of physician #1 (the one on the left)?

- o   Bedside Manner

- o   Competence

- o   Facility

- o   None of the above

What was the gender of physician #2 (the one on the right)?

- o   Male

- o   Female

What was the lowest rated quality of physician #2 (the one on the right)?

- o   Bedside Manner

- o   Competence

- o   Facility

- o   None of the above

Appendix F

Physician Ratings

Please answer the following questions honestly regarding your opinions of each

physician.

How likely would it be that you would choose physician #1 (the one on the left) for an

annual gynecological exam?

- o   Extremely likely

- o   Moderately likely

- o   Slightly likely

- o   Neither likely nor unlikely

- o   Slightly unlikely

- o   Moderately unlikely

- o   Extremely unlikely

How satisfied would you be with the care you might receive for your annual

gynecological exam from physician #1 (the one on the left)?

- o   Extremely satisfied

- o   Moderately satisfied

- o   Slightly satisfied

- o   Neither satisfied nor dissatisfied

- o   Slightly dissatisfied

- o   Moderately dissatisfied

- o   Extremely dissatisfied

How confident would you be with your decision if you chose physician #1 (the one on the left) for your annual gynecological exam?

- o Very confident

- o Moderately confident

- o Slightly confident

- o Neither confident nor unconfident

- o Slightly unconfident

- o Moderately unconfident

- o Extremely unconfident

How likely would it be that you would choose physician #2 (the one on the right) for an annual gynecological exam?

- o Extremely likely

- o Moderately likely

- o Slightly likely

- o Neither likely nor unlikely

- o Slightly unlikely

- o Moderately unlikely

- o Extremely unlikely

How satisfied would you be with the care you might receive for your annual gynecological exam from physician #2 (the one on the right)?

- o Extremely satisfied

- o Moderately satisfied

- o Slightly satisfied

- o Neither satisfied nor dissatisfied

- o Slightly dissatisfied

- o Moderately dissatisfied

- o Extremely dissatisfied

How confident would you be with your decision if you chose physician #2 (the one on the right) for your annual gynecological exam?

- o Very confident

- o Moderately confident

- o Slightly confident

- o Neither confident nor unconfident

- o Slightly unconfident

- o Moderately unconfident

- o Extremely unconfident

Appendix G

Medical Term Matching

Please try to answer the following questions to the best of your ability. Each question

only has one correct response, and no terms were repeated.

A tube-like structure surrounded by muscles leading from the uterus to the outside of the

body

- o Birth Control

- o Cervix

- o Menstrual Period

- o Pap Exam

- o Pelvic Exam

- o Speculum

- o Vagina

- o Vulva

An instrument used to hold open the walls of the vagina

- o Birth Control

- o Cervix

- o Menstrual Period

- o Pap Exam

- o Pelvic Exam

- o Speculum

- o Vagina

- o Vulva

The lower, narrow end of the uterus at the top of the vagina

- o Birth Control
- o Cervix
- o Menstrual Period
- o Pap Exam
- o Pelvic Exam
- o Speculum
- o Vagina
- o Vulva

An exam in which cells are taken from the cervix and vagina and examined under a microscope

- o Birth Control
- o Cervix
- o Menstrual Period
- o Pap Exam
- o Pelvic Exam
- o Speculum
- o Vagina
- o Vulva

The external female genital area

- o Birth Control
- o Cervix

- o Menstrual Period
- o Pap Exam
- o Pelvic Exam
- o Speculum
- o Vagina
- o Vulva

Prevention of pregnancy

- o Birth Control
- o Cervix
- o Menstrual Period
- o Pap Exam
- o Pelvic Exam
- o Speculum
- o Vagina
- o Vulva

A manual examination of a woman's reproductive organs

- o Birth Control
- o Cervix
- o Menstrual Period
- o Pap Exam
- o Pelvic Exam
- o Speculum
- o Vagina

- o Vulva

The discharge of blood and tissue from the uterus that occurs when an egg is not fertilized

- o Birth Control

- o Cervix

- o Menstrual Period

- o Pap Exam

- o Pelvic Exam

- o Speculum

- o Vagina

- o Vulva