

# Observations of Conformity in the Health Professions

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**Abstract**—Although interprofessional practice is a collaborative approach for problem solving among health professionals, its implementation can present challenges to its team members. In particular, they may feel pressured to agree with or conform to other members who share information that is contrary to their own understanding. Obtaining evidence of this phenomenon is challenging, as team members may underreport their conformity behaviors due to reasons such as social desirability. In this paper, a series of studies are reviewed in which several approaches to assessing conformity in the health care professions are tested. Simulations, questionnaires, and behavior checklists can be used to measure conformity behaviors. Insights from these studies show that a significant proportion of people conform either in the presence or absence of others, express a variety of verbal and nonverbal behaviors when considering whether to conform to others, may shift between conforming and moments later not conforming (and vice versa), and may not accurately report whether they conformed. A method of measuring conformity using the implicit bias test is also discussed. People at all levels in the healthcare system are encouraged to develop both formal and informal strategies to manage the conformity pressures that people face.

**Keywords**—Conformity, decision-making, interprofessional teams, medical simulation.

## I. INTRODUCTION

HUMANS are known to have an extreme dependence on each other in every aspect of their lives. “Blind adherence” is the phrase used by the editor of the *Journal of the Royal Society of Medicine* to call out a “deadly sin” of a healthcare professional who follows the decision-making of colleagues, rather than speaking up when he/she holds a discrepant opinion about patient care [1]. The implication is that the fear of creating discomfort within the healthcare team supersedes the concern of providing optimal patient care. Despite the passage of almost 70 years, the phenomenon of conformity continues to attract consideration [2], [3]. It has been referred to as “... a crucial dimension of culture and of human survival” [4, p.87]. Defined as matching one’s behavior to that of the group majority [5], its extension from social psychology to medicine began only more recently [6]. That is, due to concerns of medical errors occurring all too frequently, it is important to examine how dynamics such as the pressure to conform within interprofessional teams could affect poor decision-making of patient care. This review begins by situating conformity in the context of interprofessional decision-making and its negative impact on patient safety. Empirical evidence of how conformity occurs in a variety of

medical settings is then provided, followed by an examination of four methods to document it. Insights gleaned across these studies are numerated throughout.

## II. INTERPROFESSIONAL DECISION-MAKING

Interprofessional practice is common in today’s workplace and recognized as a leading strategy for optimizing allocation of professional resources and improving service outcomes [7]. Indeed, collaboration among professionals is considered key in the provision of the highest standard of care [8]. Care may be compromised, however, when professionals feel reluctant to share information that might be discrepant with others’ understanding. Specifically, healthcare professionals might feel uncomfortable in communicating information that is different from what has been expressed by others and may choose, instead, to remain silent and conform to others. Conformity, by definition, occurs when an individual changes his or her thoughts, feelings, beliefs, and/or actions in response to real or perceived pressure from others to do so [5]. Although its occurrence was first identified in the 1950s [2], it continues to be documented in the present [9]. Perhaps the most compelling reason to understand conformity is that it is a form of miscommunication error in the tally of all medical errors – which are the third leading cause of death in the United States [10].

The following section presents empirical findings of the manifestation of conformity in a variety of settings. They are presented in order from junior to senior learners, followed by practicing physicians.

## III. EVIDENCE OF CONFORMITY

This section reviews the evidence of conformity occurring in medicine. The first published study documenting how many individuals conform in a medical setting was during a straightforward procedural skill taught to medical students. Specifically, a knee simulator was used to determine if each participant would insert a needle in a location relative to the patella of the knee where he/she believed their peers had done so – despite knowing that this location was incorrect, when conducting a knee arthrocentesis (see Table I) [6]. Students were more likely to select the wrong location for a needle, when they believed that it is what their peers had done. This behavior occurred just after attending a teaching session where they were taught the correct location.

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Next, and based on anecdotal evidence of students readily conforming to their preceptors (who have a higher authority), it was considered whether they would conform to members of the health profession believed to have less authority. Indeed, a study showed that when medical students took vital signs from a simulator, half of them verbalized at least one incorrect vital sign when they heard incorrect vital signs reported by confederates posing as nursing students (lower authority) (see Table I) [11]. Moreover, 80% of nursing students also did so after hearing incorrect vital signs reported by confederates who were posing as medical students. Further analysis of all of the participants' behaviors showed that they were also likely to make an incorrect diagnosis that corresponded to these incorrect reports of each other's vital signs [12]. Thus, students chose to maintain their conformist response even when given the opportunity to privately select a diagnosis that corresponded with their own accurate vital signs reading. Rather surprisingly, those students who actually reported correct vital signs were likely to later select a diagnosis that corresponded to the incorrect vital signs they heard reported. The pressure to conform seemed particularly challenging to resist.

Considering that physicians in training at the residency level are in the final stages of their preparation to becoming independently practicing physicians, perhaps they would be unlikely to conform. A study showed that a large majority reported *feeling pressure* to conform at least once in a variety of informal and formal educational and clinical settings [13] (see Table I). These reports were similar for residents regardless of their demographic characteristics and type of educational program they attended.

TABLE I  
 EMPIRICAL STUDIES OF CONFORMITY

Description	Participants	Method	Materials	Reference
Knee arthrocentesis	Medical students	Simulation	Knee simulator	[5]
Vital signs	Medical and nursing students	Simulation	Patient simulator	[10], [11]
Formal/informal settings in educational/clinical settings	Residents	Self-report questionnaire	Paper & pencil	[14]
Grand rounds audience	Physicians	Presentation	Multiple choice questions	[15]
Physician stories	Physicians	Perspective	Narrative	[24]
Online curriculum on statistics	Graduate students	Online	Multiple choice questions	[25]
Internal medicine	Residents and medical students	Simulation	Behavior checklist	[26]
Internal medicine	Residents and medical students	Simulation	Behavior checklist	

The above studies all took place in the context of medical education. The next question though is whether fully licensed physicians also conform. They say they do. In fact, it may even be pervasive [14]. It is difficult to study the extent of conformity among practicing physicians, but there is some insight from a

grand rounds session where a respected physician provided an incorrect diagnosis to his audience and invited their reactions (see Table I) [15]. A total of 62% anonymously responded with a recommendation for consultation that matched the incorrect diagnosis. Other stories are just as alarming [16].

In the next section, four means of studying conformity are compared and contrasted. Each varies considerably in its complexity and feasibility.

#### IV. MEASURING CONFORMITY

A fundamental premise of the scientific method is that results should converge towards similar conclusions despite differences in how the results are obtained. However, for some topics where internal motivations for achievement, power, affiliation, and so on are deemed socially undesirable, self-reporting of one's own behaviors may be biased [17], [18]. Thus, they may yield different results than would observations of those same behaviors. Three methods of studying conformity are reviewed next, with each yielding unique insights about conformity.

##### A. Simulation

According to the Society for Simulation in Healthcare, simulation is an environment created to represent a real-life situation and experience to evoke a behavioral response [19]. Its ability to realistically represent situations such as interprofessional interactions regarding patient care is a question of fidelity of the simulation and learner engagement. In other words, if the simulation is poorly designed and/or learners are unengaged, then one's behavior in the simulation is not likely to represent his/her behaviors in the real day-to-day environment.

Simulation is an opportune means of observing how people may conform. It places people in settings where they are given a task and expected to use the resources available in the simulation to complete it. Such as with a knee simulator described earlier, the learner is asked to conduct the knee arthrocentesis procedure using typical materials such as gloves, swab, and needle on a model that looks like a knee. The steps and actions are the same for a patient. The location where a needle is placed can be observed and recorded to see if it is in or near holes in the wrong location of the skin (they were told were made by their peers), or in the correct location (taught to them previously by their instructor).

There were several advantages of using simulation to observe whether medical students would conform:

- 1) It was possible to observe participants conforming even when their peers were not present. Even the perception that peers had taken a particular action was enough to pressure students to act accordingly.
- 2) Observing students conducting a knee arthrocentesis procedure on real patients is not practical for research and would require needles be left in situ for observers to note the location – creating discomfort for patients.
- 3) Knee shapes and sizes differ across real patients. By using a knee simulator, this stimulus is standardized and the only variation in students' responses is whether they decide to

conform. Thus, measurement reliability is higher than it would be with real patients.

The same argument can be made for the realistic portrayal of obtaining vital signs. The high-fidelity mannequin (iStan CAE Healthcare Human Simulation©) in combination with the electronic software Muse© simulates systolic/diastolic blood pressure, respiration rate, and radial pulse read. Participants were given manual equipment typically used to take readings of these vital signs. The steps were performed as they normally would. Participants had an opportunity to practice taking vital signs to show that they had the ability to do so accurately. Once this baseline was established, any change in their accuracy could be attributed to the introduction of inaccurate reporting that occurred next. That is, actors were hired to pose as either nursing students (when reporting vital signs to a medical student participant) or medical students (when reporting vital signs to a nursing participant). Upon hearing inaccurate vital signs from two actors, the participant was then asked to verbalize the vital signs he/she had obtained from the mannequin. Finally, the researcher asked the participant and actors to select a diagnosis from a sheet of paper, placed in front of each person, which is suggested by the vital signs. This latter task was conducted privately, and participants were told that it would not be shared, in an effort to reduce or eliminate any pressure to conform. Nevertheless, many people who conformed verbally in front of the confederates and researcher (publicly) also did so on paper (privately). This phenomenon is known as private acceptance whereby people experience an actual change in their beliefs that matches their outward expression of behavior, consistent with others' behaviors [20], [21]. Thus, individuals did not merely show a superficial change in behavior according to their behavior expression towards others because their own private beliefs about the correct vital signs also changed. Of particular interest is that another subset of participants in this study did not conform publicly but they did so privately. Thus, private acceptance occurred without any public display of conformity.

This simulation scenario provided many distinct advantages of understanding conformity among nursing and medical students:

- 1) It was possible to train actors to pose as real nursing and medical students. One of the criticisms of using actors within social influence research, even those who are well trained, is that they may act in an unnatural or artificial manner [22]. However, there is empirical evidence that actors do seem realistic and elicit intended reactions from healthcare providers [23], [24]. Similarly, during the debriefing of the vital signs simulation study, all participants stated that they believed the actors to be real students.
- 2) Nursing students conformed to medical students (perceived as higher status), and medical students conformed to nursing students (perceived as lower status).
- 3) Students in the health professions may conform both publicly and privately, with direct implications for how they may manage patient care.

Another simulation study was conducted online. Given that

post-secondary education often occurs in spaces supported by the Internet, such as online classrooms, a simulation of a curriculum-based research methods and statistics exam for students to answer through web conferencing was developed (see Table I) [25]. Participating students logged into the conference in real-time with one instructor and three other students, all of whom were researchers posing in these roles. Each participant was introduced to the other students and instructions were given about the types of questions that were on the exam, along with the order of responding. A participant was asked to express his/her answer to a multiple-choice question after two other students provided their answers. These answers were posted beside the names of each person so that the participant could see them. Participants were randomly assigned to either seeing these incorrect answers, or to a control group where answers were not shown on the screen. Participants were more likely to provide incorrect answers when they saw incorrect answers posted by other students, compared to those who saw no answers. Thus, conformity seems to occur in both the online and physical simulation environments.

#### *B. Questionnaires*

A much less complicated method of understanding people's experiences of conformity is through self-report questionnaires. Resources in terms of time, cost, and personnel are far fewer. They measure, however, people's conformity perceptions rather than behaviors – which are interesting to understand but may be less representative of true actions. Another limitation is that no variable can be manipulated to observe its impact or change on someone's behavior. The critical importance about how best to measure conformity is whether people's reports of their conformity behaviors differ from their actual expression of these behaviors. Briefly, they do.

In a study where questionnaires were administered to surgical residents, a large majority identified experiencing the pressure to conform; however, they rated it at the low end of severity and believed it resulted in few medical errors [13]. The most direct contradictory evidence is between their reports of who they feel pressure to conform to, and who they actually conform to. Specifically, residents reported that they almost never or rarely feel pressure to conform to lower status students (lower year students). Yet, 50% of medical students in the vital signs simulation conformed at least once upon hearing nursing students' incorrect reports of vital signs [11]. Thus, perhaps, conformity is so natural that we are unaware of it.

#### *C. Behavior Checklists*

In the simulation sessions previously described, changes in behavior were observed at the moment when participants were asked to respond after hearing incorrect reports, perhaps as a result of facing the stressful dilemma about whether to conform. They include, for example, clearing of the throat and shifting of feet. These archived videos were then recoded to document the types of behaviors that occurred while conforming, to develop a measure of conformity behaviors [26], [27]. First, research in communication, social psychology, and medical education was

reviewed to develop a list of verbal and nonverbal behaviors that could suggest stress or anxiety. Then the simulation videos were watched to record the number of times people expressed these specific behaviors. Behavior items were dropped and modified to match those observed. The remaining items were then tested in simulation sessions at a local hospital where residents and medical students were posted to internal medicine (see Table I). A resident and a medical student participated together in one of four standardized simulation scenarios about diagnosing and treating a medical condition: C. Difficile Colitis, Pneumonia, Upper Gastrointestinal Bleeding, or Diabetic Ketoacidosis versus Hyperosmolar Hyperglycemic State. For each one, a nurse provided medical information and responded to participants' requests for tests to be conducted and medication to be administered. At one point in the above scenarios, an equivocal suggestion was inserted to influence decision making. Almost a quarter to over a third of the participants (depending on the scenario) followed this suggestion. The types of verbal and nonverbal behaviors they showed when conforming were similar to those who did not. Thus, people's behaviors may not reveal the extent to which they are influenced by others. Perhaps they are more indicative of the stress that all participants may have experienced regardless of the decision they made. They may also simply represent the demands of the environment. For example, with the number of people and amount of equipment in the room, shifting from one foot to the next may have been due to the limited space available to stand in, rather than any internal thoughts/feelings, per se. Although imaging research shows that there is increased activity in the occipital and parietal lobes when people conform [28], measures of people's behaviors while conforming may not be sensitive or specific enough to detect people's reactions. In other words, the most reliable measures of conformity currently available either use imaging or identify the specific conformity action. These simulation scenarios provided new insights about conformity not observed in previous simulations:

- 1) Some participants seemed to both conform and not conform. That is, one participant was managing the patient's care correctly, in contradiction to the senior health professional's suggestion, but at the end of the session repeated this person's inaccurate diagnosis. Also, three participants verbally agreed with all the inaccurate suggestions that the senior health professional was making, but at the end gave the correct diagnosis. Considering that stress levels may increase distractibility and impair attention, short-term memory, and working memory [29]-[32] these factors may mediate the effect of exposure to a conformity stimulus on people's behaviors. These characteristics need additional examination in future conformity studies. Perhaps people may conform as a means of managing or reducing stress as some preliminary evidence in younger populations may suggest [33]. Future research may reveal why people may switch in and out of conformity.
- 2) Each of these simulation scenarios involved two students (with one randomly designated as the participant whose

behaviors were coded), whereas other simulations involved only one student. This second person may have acted as a source of support in agreeing with the facts of the case, which may have given the participant confidence in disagreeing with the senior health professional. Thus, the number of participants and actors, and their status are important to consider when examining the types of situations people are most likely to conform in.

Some final observations of conformity across all these studies were particularly surprising. Whether conformity occurs among medical students in a simulated knee arthrocentesis procedure, with nursing students in a simulated vital signs task, among school psychology students in simulated case consultations, with graduate students during an on-line exam, or even among more senior medical students when diagnosing and caring for simulated patients, they did not always seem aware of when they conformed. That is, all participants were carefully debriefed about the purpose of the research and asked for consent for their data to be included in the study. For those in the simulation studies, they were asked what they thought and felt during the activity. In every study, we made anecdotal comments that a few participants clearly stated that they did not conform after being directly observed to having done so. It was not clear whether the participants remembered their actions, were confused, or did not wish to admit to conforming. The pervasiveness of conformity in these studies and the suggestion that they are implicit and even covert, leads to another approach to understanding conformity.

#### *D. Implicit Bias*

We have begun to explore specific interpersonal factors which make an individual more susceptible or, conversely, inoculated to pressures to conform. Of particular interest is the potential role implicit bias plays in conformity behaviors within interprofessional collaborative teams. There is evidence to suggest that actual or perceived hierarchy impacts team member's willingness to challenge decisions made by leaders [34]. However, the pattern of conformity documented across studies is not sufficiently explained by low and high status. In the knee study, for example, nursing students conformed to medical students (perceived as higher status), and medical students conformed to nursing students (perceived as lower status). It is possible that what matters within interprofessional teams is the unconscious and negative evaluations that a member of one profession holds towards those of another profession with respect to their collective skills, knowledge, and expertise. Certainly, healthcare professionals are not uniquely immune to the influence of implicit bias, as has been demonstrated across a number of studies examining clinician-patient interactions [35]. Professional protectionism and rivalry, differences in professional values, and compartmentalized professional education are just some of the factors that may contribute to an individual within one profession developing unconscious and negative evaluations of another professional group's

ability to effectively contribute to joint decisions and shared learning. The Implicit Association Test [36], a widely used test of implicit bias, can be used to examine the extent to which an individual is more or less likely to conform to other professional groups for which he/she holds an unconscious and negative evaluation.

#### V. CONCLUSION

The education and practice of healthcare occur within social environments. Subtle motivations within and/or shared among individuals in medical groupings such as interprofessional teams can have a direct impact on people's behaviors. When these behaviors are not consistent with evidence-based medicine, precision medicine, professional college standards, or however best practice is defined, there is risk of harm to patients. Moreover, the pressure to conform may place team members at risk of burnout, low job satisfaction, and early departure from the profession [37]. The eventual outcome, thus, of conformity is deterioration in the provision of healthcare. It is incumbent upon people at all levels in the healthcare system to develop both formal and informal strategies to manage these types of team dynamics, which they will inevitably encounter.

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