Research Advances in Conformity to Peer Pressure: A Negative Side Effect of Medical Education

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Research Advances in Conformity to Peer Pressure: A Negative Side Effect of Medical Education

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Abstract

Curricula in medical education are intended to impart the knowledge, skills, and attitudes that students will require as physicians to meet patient needs. There are additional unarticulated and implicit messages that inherently emerge in medical education. This paper examines one such message: conformity to peers, whereby individuals repeat inaccurate information reported by peer group members. Empirical evidence from 60 years of social-psychological research demonstrates that this phenomenon of conformity occurs across experimental tasks, cultures, and over time. It has yet to be systematically studied in medical education. Emerging studies from the University of Calgary, Canada, and in collaboration with King Saud bin Abdulaziz University will be reviewed in conjunction with the various constructs used to represent the phenomenon of conformity to determine relevant themes about student experiences and their implications for education.

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1. Introduction

Medical education is expected to prepare healthcare professionals to fulfill the various roles of scholar, collaborator, manager, professional, advocate, communicator, and medical expert. The mechanisms of achieving such outcomes are the implementation of research based education policy and practice in the areas of teaching, learning, assessment, leadership, evaluation, curriculum, and management – to name a few. Such educational endeavors impart knowledge and skills to students, as well as attitudes and values of the profession. These may include, for example, dedication, honesty, and self-reflection. Although laudable and well-intentioned outcomes, unintended consequences of medical education are also learned, such as values that promote negative attitudes towards allied health professionals and competition rather than cooperation. These “learned lessons” are likely to extend into medical practice and directly interfere with teamwork and inter-professional practice.

This article reviews one such “negative side effect” of the medical education curriculum: conformity. The progression through medical school is challenging and intense. One means of coping with the curricular demands is through peer support. Sharing course notes, advice to manage program expectations, and reactions to exams are all forms of social support students offer and receive from one another in medical school. This camaraderie may lead to long lasting friendships;
however, reliance on the peer group for these types of support may prevent students from challenging information discussed in small group settings such as problem-based learning. Rather than question information presented by a peer, students may be inclined to agree, in an effort to maintain a positive affiliation. This pressure, combined with the all-too-frequent use of shaming and intimidation to teach medical students, creates a social norm for silence. Accordingly, students may be reluctant to ask questions in order to conceal misunderstanding or gaps in knowledge, and they may avoid providing contrary information to prevent conflict. Although these coping strategies may protect students from emotional harm, they may place patient safety at risk.

2. Introduction to conformity

Conformity – the compliance or agreement of one’s actions to those of others is, by definition, neither a positive or negative term. As shown in Fig. 1, it is beneficial for people to adapt their behaviors to match those of others within peer groups, professional communities, educational settings, and in the general public. For example, codes of ethics and standards of practice that pertain to one’s profession are expected to be observed to ensure competent, respectful, and responsible behaviors to the people served by the profession. In the context of healthcare, these behaviors are critical to the provision of excellent patient care. These professional behaviors create consistency in the delivery of care, provide organization to the various systems and processes of care in the form of an organizational structure, and promote agreement towards achieving important outcomes.

Conformity in some situations, however, can be detrimental to the wellbeing of others. An individual who changes his or her behaviors to follow those of others, despite believing that those actions are incorrect or even harmful, is conforming to the majority of group members, and this phenomenon has received considerable attention in many areas of research since the 1950. It has also been referred to as groupthink, communication errors, decision-making errors, and so on. What all these terms have in common is the underlying reason for these behaviors: yielding to peer pressure. Recently, Heffernan extended the notion of willful blindness outside of the legal context to apply to any situation in which an individual fails to act and prefers to ignore factual information for the purpose of maintaining the status quo – just as others do. Thus, conformity may refer to a change of, or failure to change, one’s behavior in order to act in a manner consistent with others, despite believing that these behaviors are improper.

3. Phenomenon of conformity over time and across cultures

The seminal research on conformity was conducted in the 1930s and 1950s by Muzafer Sherif and Solomon Asch. Using a series of perceptual tests, their experiments determined that people reported the same incorrect information about distances between lines and dots that they heard from other study participants. To be sure, these researchers determined that these incorrect reports were significantly less likely to occur when participants did not hear this incorrect information. These studies, along with many others, suggest that people are likely to change their behaviors to be consistent with the group’s behaviors. This can be explained from a social-psychological perspective as the human need to be accepted by a peer group, whether it consist of friends, colleagues, family members, and so on. Acceptance in the group is enhanced by a sense of co-orientation, the perception of being similar to other group members, sharing their values, objectives, and needs. This group affiliation may meet additional needs for friendship, all of which are inherent to the functioning of most human and even other animal populations. For example, laboratory studies indicate that male vervet monkeys change their food preferences to be similar to those demonstrated by female monkeys (Fig. 2).

The cross-cultural consistency and temporal stability of conformity has also been considered. In Bond and Smith’s review, they list many countries in which higher rates of conformity were demonstrated in more
collectivistic rather than individualistic cultures, Bond and Smith also identified many examples of how these differences were not replicated in such cultures. In fact, it appears that conformity can occur in any culture and may depend more on the conditions of the situation. For example, Baron, Vandello, and Brunsman identified that people are more likely to conform to difficult rather than easier tasks. In regards to temporal stability, again results were mixed. There is considerable evidence of earlier studies yielding higher rates of conformity; yet, there are many recent studies showing even higher rates. Thus, in general, it appears that conformity may not be cultural or time dependent.

4. Studies of conformity in medical education

The majority of studies on conformity involve the use of perception tasks where participants must consider whether to trust their own observations (detecting matching lines, estimating the distance a dot travels, identifying matching faces) or instead echo the statements they hear from others. Although some studies have demonstrated conformity to more than simple perception tasks, such as to changes in preferences and attitudes, these studies may not be directly generalizable to more realistic tasks such as when learning curriculum-based information. In recognition of the need to extend 60 years' worth of conformity research to medical education, a series of curriculum-relevant studies was initiated at the University of Calgary.

Our first study was conducted with clerks (third year medical students who had begun their clinical rotations) who were learning to conduct a knee arthrocentesis procedure in a simulated environment. Upon watching a video and receiving instruction from a preceptor on how to aspirate the knee joint, clerks individually performed the task. When using a knee simulator with holes they were told had been made by other clerks learning the procedure, they were likely to insert the needle close to or in those same holes. These holes, however, were in the wrong location – at the midpoint of the patella. It was surprising that while inserting the needle incorrectly, many of them verbalized the correct location – at the superior third of the patella. Thus, they seemed to recognize simultaneously the correct information and the misleading information, trying to acquiesce to both. Two additional findings were surprising. Conformity occurred even though fellow students were not present, suggesting that people compare themselves to others even in their absence. Also, some students stated that they had not been influenced by the needle marks when they, in actual fact, had put the needle directly into the marks. This latter finding was replicated in two subsequent studies.

Our second study examined conformity between medical and nursing students. In recognition that healthcare is often delivered in an interdisciplinary setting which involves a hierarchy between physicians and nurses, we paired these two groups of students. The curriculum-relevant task was to read vital signs (radial pulse, systolic and diastolic blood pressure, and respiration rate) from a patient simulator. We expected that nursing students would be more likely to repeat incorrect vital signs values reported by medical students, and that the latter would be less likely to repeat values stated by the former. Indeed, about 80% of the nursing students repeated the same incorrect value for one or more vital signs, while about 50% of the medical students did so. Thus, these results seemed to reflect the power differential between the nursing and physician professions. Nurses may feel greater pressure from those higher in the hierarchy to conform to information than do physicians. In addition, both groups showed a high rate of conformity suggesting that it may be a fundamental human characteristic that applies to people in a variety of group settings. Again, over one third of students who demonstrated conformity to the wrong vital signs later reported in an interview immediately following the experiment that they had not felt pressured to conform. Thus, some people may wish to present themselves or do actually consider themselves nonconformists despite demonstrating conformist behaviors.

These results are similar to two additional studies conducted with multiple choice questions assessing knowledge of course curricula. One of these studies was conducted in a virtual classroom with students in a pre-
service teaching program. Students who were shown incorrect responses from other students were more likely to select these same incorrect responses than were those students who did not see any responses. Similarly, medical students at King Saud bin Abdulaziz University in Saudi Arabia were also more likely to obtain incorrect responses to multiple choice questions upon seeing them, compared to students who were not shown incorrect responses. Thus, regardless of whether attending in an online or university classroom, they are subject to the influence of their peers when considering curriculum-relevant information.

All the conformity studies in medical education described thus far employed observational methods to record people's behaviors. Moreover, they all yield similar results of a high rate of conformity to incorrect information that they believed was given by peers. In a study currently underway, an alternate research method was used. That is, residents were asked to self-report conformity they may have experienced in a variety of learning and medical situations. A preliminary analysis seems to suggest that they reported rarely feeling the pressure to conform to others across all of these situations. This stands in marked contrast to observations of behaviors in our experimental studies. It seems that self-reports of conformity do not coincide with people's behaviors. Just as some participants in our experimental studies who conformed to inaccurate information did not disclose doing so, they certainly were observed to repeat the same incorrect information they had heard reported by their peers.

5. Students' experiences of conformity

Medical students, clerks, and residents are under continuous assessment and monitoring both individually and within their peer groups. Communication within this context may leave them unclear about their competence, identity, and suitability in the medical program or chosen specialty. While many students are unmoved in their self-concept, some may question their value, contribution and worth. Researchers, in fact, have shown that people filter feedback from others against their own self-perception and see themselves as they believe others see them. The mental jostling that students engage in can foster fear and uncertainty. “Mind reading” of evaluators, what it's”, “should's”, and “catastrophizing about the outcomes” may occur. Worrying may appear with questions such as: Do they think I belong here? What if I am unable to get letters of reference? Should I be studying more for this preceptor because of his/her reputation? If I don't get into surgery then what would I do? My whole future is determined by this experience. Worrying thoughts may bring forward feelings of annoyance, anger, anxiety, fear, dejection, shame, envy and sadness. These thoughts and feelings may lead to self-isolation, sleep loss, low motivation, and general dissatisfaction with life. This personal sense of low credibility may provoke adherence to others and conformity during intense assessment situations.

With clear evidence that students in higher education in general, and in the health professions in particular, are likely to conform to inaccurate course-based information presented in learning settings, it is important to further consider the consequence to learning. There are many reasons why students may feel pressured to conform to their peers. First, evaluation and assessment permeate all education settings – classrooms, clinics, lecture theaters, small group meetings, and so on. Concern about how one will be evaluated by peers and teachers may increase the likelihood of subordination to the group. Indeed, students typically want to appear knowledgeable and skilled in front of others. This may be particularly essential when attempting to build networking and collegial relationships both in the short-term and for the long term. Second, students may come to believe that since they are in the position of learner rather than authority, they may not question or challenge information. Their hierarchical status may establish a passive response to their learning whereby they readily adopt information they learn without validating or affirming its accuracy. Of course, this would not be possible for all points of learning, but when patient safety is at stake, it is incumbent on them to ask questions and check information. Third, constructing and acquiring knowledge requires students to reveal what they do and do not understand. If they believe that other students have better comprehension than they do, they may become anxious and reluctant to ask or respond to questions that may reveal lack of understanding. For all these reasons, it is conceivable that conformity to information in the face of uncertainty is extremely likely. The risk is not only to the individual learner, but also to the care of patients.

6. Implications of conformity for medical education

It is clear from the existing research that groups can exert pressure on an individual to conform to various forms of erroneous information – even when it pertains to academic learning tasks. Applied to medicine, this phenomenon is of great concern to the provision of safe, quality health care. As “teamwork has become a major focus in healthcare”, it is critical that we examine how conformity occurs in these health care teams. As listed by Salas and Cannon-Bowers, there are many competencies required for effective teamwork to take place. In addition to task relevant knowledge, group members must understand how to negotiate relationships within the team.
(how to organize one’s actions in relation to another, knowing what other members know about the task in order to predict their behaviors); they must possess several skills such as effective communication and adaptation; and, in addition, must have specific attitude competencies such as motivation, trust, commitment, interdependence, cooperation, and a collectivist orientation. These requirements seem rather difficult and perhaps unreasonable when they must be met by all team members. This type of model of teamwork also overlooks the tension that often exists in groups between the need for individual expression on the one hand, and group cohesion on the other whereby people typically prefer to avoid conflict and, instead, concede to group consensus about diagnosis and treatment. Therefore, before any of the competencies required for teamwork can be met, individuals must have the confidence to take risks in the form of offering an alternate opinion, or asking a question – both of which require that each individual feels respected and accepted by other group members. Patient safety, thus, requires psychological safety on the part of team members providing care for the patient.

In summary, medical schools must become psychologically safe environments in which students are encouraged and invited to seek out information, check their understanding, and clarify what seems confusing. They must be reassured that they will not be mocked, derided, or chastised. Interprofessional education must be included in the medical curriculum to provide deliberate teaching of effective teamwork skills from the start of medical school and include students across the health professions.

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