

The Importance of Self-determination Theory for Medical Education

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Abstract: While some theories of human motivation focus exclusively on levels of motivation, self-determination theory argues that different types of motivators, even when the resulting motivation is high, will lead to very different outcomes. This theory differentiates between two primary kinds of motivation, controlled and autonomous. Controlled motivation depends either on explicit or implicit rewards or punishment or on people's internalized beliefs about what is expected of them. Learning in controlled situations, in which students act under pressure and anxiety, is likely to be rote, short-lived, and poorly integrated into students' long-term values and skills. In contrast, autonomous motivation, as its name implies, is personally endorsed and reflects what people find interesting and important. While controlled moti-

vation involves compliance with pressures, autonomous motivation involves behaving with a sense of volition, agency, and choice. Autonomously motivated learning leads to better educational outcomes. There is evidence that medical students who learn in autonomy-supportive environments act in more autonomy-supportive ways in their interactions with patients. Because the reliable implementation of practice guidelines and physicians' use of an autonomy-supportive style have been associated with more positive health outcomes (particularly in the behavior-related areas of smoking cessation, weight loss, etc.), more autonomy-supportive medical education may result in more effective health care delivery. *Acad. Med.* 1999;74:992-995.

Turnbull¹ recently challenged medical educators to become more familiar with educational theory and research, including theories of motivation, in order to better inform the process of medical education. By applying the principles of such human motivation theories as self-determination theory,² medical educators can better facilitate not only students' acquisition and subsequent use of medical knowledge and competencies, but also their conceptual understanding, personal adjustment, desire for lifelong learning, and acceptance and use of an interpersonal style likely to enhance patients' motivation to behave in healthier ways.³ Self-determination principles might explain recent findings of improved conceptual learning for students in problem-based curricula; students' enhanced valuing of the psychosocial aspects of medical care when they have "learner-centered" instructors; and the tendency of highly controlling traditional medical education to diminish learners' initiative. Techniques derived from self-determination theory can allow medical educators both to enhance students' learning and application of relevant facts and concepts and also to transmit the values and methods of patient-centered medicine.⁴

Self-determination theory, when applied to the long-term goals of medical education, may also help educators address

such problems as the gap between current medical practice and what are known to be effective counseling and pharmacologic treatments for patients who smoke⁵ or who have hypertension⁶ or coronary artery disease.⁷ Some of this gap may be explained by physicians' lack of knowledge, some by the failure of physicians to put the knowledge they have into effective practice, and some by poor patient motivation. The application of self-determination principles in education may narrow this treatment gap by promoting physicians' reliable use of effective treatments and their adoption of an interpersonal style that increases the likelihood of patients' carrying out treatment recommendations.

SELF-DETERMINATION THEORY

Motivation refers to the forces that move people to act. Many psychologists treat motivation as something that varies primarily in amount—something that people have more of or less of. Researchers who think of motivation in this way examine the conditions (e.g., rewards) that result in high levels of motivation versus those that result in little or no motivation.^{8,9} Self-determination theory recognizes the importance of this distinction while further differentiating kinds of motivation, arguing that different types of motiva-

tion, even when the level of motivation is high, will lead to very different outcomes. Thus, self-determination theory investigates the factors within social contexts such as classrooms and physicians' offices that engender different types of motivation.

The more maladaptive forms of motivation are referred to as *controlled*, and are dependent either on external demands and contingencies or on introjected representations of those demands and contingencies. With *external regulation* people's behavior is controlled by explicit or implicit rewards or punishments, and with *introjected regulation* people's behavior is controlled by internalized contingencies about what they "should" do and by accompanying intrapsychic rewards and punishments such as self-aggrandizement and self-derogation. In these controlled forms of motivation, people act with a sense of pressure and anxiety. Learning in controlled situations is likely to be rote, short-lived, and poorly integrated into students' long-term values and skills.^{3,10} Medical schools whose faculty do not understand self-determination theory may inadvertently support those strategies of control, pressure, and coercion.

Self-determination theory contrasts controlled motivation with *autonomous motivation* (or regulation), which is personally endorsed and reflects what people find interesting and important. The prototype of autonomous regulation is *intrinsic motivation*, which is illustrated by people's engaging in an activity simply because it is interesting and enjoyable. The motivation in such situations stems from the inherent satisfactions of discovery, challenge, and effective problem solving. Another highly autonomous form of motivation is *identified regulation*; which is illustrated by medical students' engaging in an activity because they have identified with its value for functioning as a physician. Whereas controlled motivation involves compliance with pressures, autonomous motivation involves behaving with a sense of volition, agency, and choice.

Research has clearly demonstrated that, relative to controlled motivation, autonomous motivation for learning promotes greater conceptual understanding,^{11,12} better academic performance,¹³ higher academic achievement,¹⁴ stronger feelings of competence,¹⁵ enhanced creativity,¹⁶ a preference for optimal challenge over easy success,¹⁷ more positive feelings while learning,¹⁸ and a tendency to cope more positively with failures and setbacks.¹⁹ Research reviews relate autonomous motivation in students from primary school through graduate school and from diverse cultures not only to higher-quality learning, but also to greater persistence and better psychological adjustment.^{10,20-22}

These important findings linking autonomous motivation to deeper learning outcomes justify self-determination theory's differentiation of types of motivation (as opposed,

again, to simply defining *levels* of motivation), and clarify why applications of social learning theory⁹ that call for combining controlled and autonomous motivations to yield more overall motivation are likely to have negative results.²³ Specifically, the use of motivational techniques such as extrinsic incentives that tend to be experienced as controlling are likely to diminish rather than complement autonomous motivation.

FACILITATING MEDICAL STUDENTS' AUTONOMOUS MOTIVATION

Several studies guided by self-determination theory have addressed the question of how to encourage students' autonomous motivation. An instructor's style of interacting with students substantially influences the degree to which students' motivation to learn is autonomous or controlled, which in turn affects students' subsequent practice of what they have learned. Various studies have shown, for example, that when teachers support students' autonomous motivation, the students indeed become more autonomously motivated and evidence enhanced conceptual understanding, behavioral persistence, and perceived competence.^{10,12,24}

The concept of *autonomy support* describes a learning climate in which authority figures such as educators take the perspectives of students into account, provide relevant information and opportunities for choice, and encourage the students to accept more responsibility for their own learning and behavior.^{16,25-28} Autonomy support also entails teachers' being meaningfully involved in students' learning through dialogue, listening, asking students what they want, providing satisfying rather than superficial replies to student-generated questions, providing factual information and advice, and suspending judgment when soliciting the opinions and reactions of students.²⁹ An autonomy-supportive orientation minimizes the use of pressure and control while encouraging a high level of performance.

In contrast, instructors who are more controlling tend to try to motivate their students with such external pressures as rewards, punishments, and judgmental evaluations; such instructors have been found to diminish their students' autonomous motivation to learn.²³ Because studies have confirmed the widespread impression that the traditional approach to medical education is highly controlling,³⁰⁻³² research on the effects of autonomy-supportive versus controlling educational climates is highly pertinent. The failure to make a distinction between the concepts of autonomy and efficacy in human agency has led Mann⁹ and others to ignore the negative effects of external pressures on intrinsic motivation and learning.³³

Since evaluation has the potential to undermine motivation because it by nature provides external pressures, med-

ical educators may feel as if they are in a bind when fulfilling their public obligation to ensure that their students meet competency standards. However, evaluative feedback can be presented with either an autonomy-supportive or a controlling style, and it is the controlling style more than the performance of feedback that has been found to undermine autonomous motivation.³⁴ Evaluation given in an autonomy-supportive manner maximizes the opportunity for students not to feel controlled, enabling them to use the information in an adaptive rather than a maladaptive manner.

AUTONOMY-SUPPORTIVE TEACHING AND PATIENT-CENTERED PRACTICE

The empirical exploration of self-determination theory in medical education has revealed another important finding. Specifically, a longitudinal study of second-year medical students taking a six-month medical interviewing course³⁵ showed that when the instructors were more autonomy-supportive, not only did the students become more autonomous in their learning and feel more competent, but the value they placed on the psychosocial aspects of medical care increased. Furthermore, the students in turn were more autonomy-supportive (or patient-centered) several months after the course ended, when they interviewed simulated patients about modifying cardiovascular risk behaviors (e.g., smoking, hypertension, and diet). This finding suggests that medical students who learn in autonomy-supportive environments are likely to use an autonomy-supportive style to motivate their patients.

Studies of doctor-patient interactions have shown that when providers use an autonomy-supportive style of relating to patients, the patients become more autonomous with respect to their own care and show improved adherence to a variety of health-relevant behaviors. In studies of weight loss,³⁶ substance-abuse treatment,³⁷ smoking cessation,³⁸ prescription adherence,³⁹ and glucose control for patients with diabetes,⁴⁰ it was found that patients who acted more autonomously showed superior adherence to treatment plans and improved health outcomes when compared with those who acted in response to controlled motivation.

CONCLUSION

From the studies outlined above, an interesting picture emerges. It seems increasingly clear that when medical faculty and curricula support learners' autonomy, the students become more autonomously motivated to learn, more persistent in their relevant practices, more psychosocial in their orientation, and more supportive of their patients' autonomy. Because the reliable implementation of practice guide-

lines and physicians' use of an autonomy-supportive style have been associated with more positive health outcomes, more autonomy-supportive medical education may actually result in more effective health care delivery.

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