

## Highly Self-Efficacious or Simply Delusional?

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### Abstract

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Self-efficacy has been associated with beneficial behaviors including better job performance. However, less often studied is the potentially negative impact individuals may have due to their self-efficacy beliefs. This study focuses on 3 characteristics (narcissism, locus of control, and self-reflection) that may lend to an individual overestimating their self-efficacy, which then may impact medical errors in hospital. Safety culture is evaluated as a moderating variable to assess if organizational characteristics may impact the relationship between hyperbolic self-efficacy and medical errors.

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**Key words:** Self-Efficacy, Narcissism, Locus of Control, Self-Reflection, Medical Errors

### 1.0 Introduction

Identifying characteristics that contribute to an individual's successful performance has prompted a great amount of theory building, research and investment. Organizations desire the ability to assess new hires with the intent to predict future performance; correspondingly, individuals and those interested in performance training seek such assessment to positively impact career success.

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Self-efficacy is often used to describe why certain individuals are more successful in specific situations, and there is a substantial literature that describes that process.

The overwhelming majority of the self-efficacy literature indicates that the more self-efficacy an individual has, the better that person will be able to perform (Cady, Boyd, & Neubert, 2001; Judge, 2007; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). For instance, individuals with high levels of self-efficacy are more able to cope with stress (Kreitler, Peleg, & Ehrenfeld, 2007; Lang & Lee, 2005), have higher health related quality of life (Kvarme, Haraldstad, Helseth, Sorum, & Natvig, 2009), engage in more physical exercise (Scholz, Keller, & Perren, 2009), stop smoking (Gwaltney, 2009), and are more likely to recover from trauma (Luszczynska, Benight, & Cieslak, 2009).

Factors that might reduce or negate self-efficacy's impact on performance are less often evaluated. In Stajkovic and colleagues (1998) meta-analysis, they propose studying the external or environmental factors that might reduce the accuracy of an individual's efficacy estimations. Over a decade later, relatively little research focusing on that issue has been conducted; however, two recent studies have attempted to further explore this question. First, a study conducted by Tabak and colleagues (2009), revealed that time-on-task moderates the effect that self-efficacy has on performance indicating that even when an individual feels that he or she can complete a task (i.e. they feel task specific self-efficacy) he or she may not actually perform better. Second, a meta-analysis by Judge and colleagues (2007) indicated that individual personality differences contribute to work related performance at least as much as self-efficacy, and that certain individual differences were negatively related to self-efficacy. Judge and colleagues (2007) conclude, much the same as Stajkovic and colleagues (2009) that future research needs to evaluate self-efficacy's impact on performance through research on additional individual difference variables. Wisdom holds that too much of anything is a bad thing or, at least, can contribute to negative consequences. This logic has provided relatively few studies attempting to determine if and when a person can have too much self-efficacy. This may be due to the rarity in which this occurs, the lack of literature focusing on the contributing factors, or an individual's ability to properly monitor their interactions with people and information that they receive from their environment.

For instance, surgeons who are highly self-efficacious may be less likely to make minor errors, and more likely to make severe errors. This could stem from the fact that in order to become highly self-efficacious they had to become proficient at avoiding the smaller, easier to observe errors that would reduce self-efficacy.

Over time, as goals are set higher (i.e., a larger patient base, shorter times for surgeries, greater demand for their time and expertise), the physician gains greater confidence in his or her abilities. As the physician manages a greater number of patients, and allocates shorter times for surgery, the likelihood of major error increases. Further increasing the potential for error is the physician's engagement with more complex medical cases, such as operating on clinically severe patients. Due to the amount of information being accumulated by the physician, they may block out information that doesn't fit within their realm of experience or knowledge. On the other hand, physicians that are less self-efficacious (excluding those in the lowest level of self-efficacy) are less likely to kill people, but may be more likely to have a greater number of minor errors. In this paper, we focus on how task specific self-efficacy, defined by Bandura as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (1994, p. 71), may actually contribute to errors. In addition, individual aspects that might contribute to this relationship will be explored.

### 1.1 New Contribution

This paper will extend the existing research in the following ways. First, this study will extend previous research that has mostly focused on overconfidence. The previous literature has made some connection between overconfidence and errors (Berner & Graber, 2008; Deaves, Luders, & Luo, 2009; DellaVigna, 2009; Huang, Smith, York, & Weingart, 2009; Koku & Qureshi, 2004; Moores & Chang, 2009; Vancouver, Thompson, Tischner, & Putka, 2002). However, most of these studies have tended to focus on generalized confidence or overconfidence on performance, while the rest of the literature provides passing reference, mostly anecdotal, to the consequences of overconfidence. The literature that has focused on self-efficacy and negative performance includes a study by Vancouver and colleagues (2002) which found that self-efficacy can be negatively correlated with performance when an individual's self-efficacy was manipulated to allow the participants to believe they scored higher on a test than they actually did.

Similarly, Stone (1994) researched the impact that high self-efficacy had on effort toward tasks. He found that those with high self-efficacy were less likely to spend as much effort on a task as those who were less self-efficacious.

While these studies do point to a connection between high levels of self-efficacy and negative performance, they did not look at individual differences or individual processes which might influence an individual to become highly self-efficacious. However, Vancouver and colleagues (2002) did recommend future research to focus on which elements and processes most impact this relationship. This study will seek to do just that. This leads to the second extension of existing research which is to define how organizational safety culture moderates self-efficacy's affect on performance. Previous research has not taken into account the moderating affect that organizational safety culture has on highly self-efficacious individuals work performance.

## **2.0 Conceptual Framework**

Self-efficacy depends upon an individual's experiences, observations of other's experiences, feedback from external sources, and self appraisal of internal state (Bandura, 1994). In other words, an individual's self-efficacy should depend on an individual's ability to: 1) acquire information from the environment, 2) utilize that information to assess discrepancies between actions and reactions, and 3) apply the appropriate mechanisms to reduce discrepancies. People should be able to appropriately adjust their level of self-efficacy through both self-reflection and from input by environmental factors (i.e., events, people's reactions, or through the actions of others). This allows for individual's belief about how capable they are at performing specific tasks to adjust over time, as they gather data from the environment, and self-reflect upon their actions and past performances.

Due to the fact that self-efficacy consists of an individual's own perception of their ability to perform a specific task, it would stand to reason that if an individual is unable or incapable of accurately assessing their abilities they may, in fact, overestimate their self-efficacy and actually achieve lower performance. Specifically, we propose that high levels of self-efficacy can provide a false sense of security in that individuals feel they are more knowledgeable, more capable, and in greater control of a situation than they are in reality. These ideas mature from a lack of narcissism, self-reflection, and an internal locus of control.

## 2.1 Narcissism's Affect on Self-Efficacy

Narcissism is a personality disorder that sets the individual's perspective squarely at the center of the universe. The world should and must revolve around that person in its most extreme cases. The DSM-IV (American Psychiatric Association, 1994) indicates nine characteristics of a narcissist. These include: 1) grandiose sense of self-importance, 2) preoccupation with fantasies of ultimate attainment, 3) belief that he or she should associate only with others who are "special," 4) requirement for excessive admiration, 5) sense of entitlement, 6) exploitation of others, 7) lack of empathy, 8) enviousness, and 9) arrogant behavior and attitudes. The narcissist struggles with information that points to evidence that he or she is not very important, is wrong, or is not capable of doing the things they find important. This may lead the narcissist to fight against or reject information that does not correspond to their perception of self (Horton & Sedikides, 2009; Morf & Rhodewalt, 1993).

"At its most basic, narcissism is self-love" (Hiller & Hambrick, 2005, p. 302). When this self-love becomes consuming and the sole focus of the individual, the result can be devastating (Hiller & Hambrick, 2005). "Reactive narcissists (those who have the pathological form) have a grandiose sense of self-importance, take advantage of and devalue others, and live under the illusion that their problems are unique and especially burdensome" (Hiller & Hambrick, 2005, p. 302). Narcissist can promote counterproductive work behavior (Penney & Spector, 2002), including engaging in both comparative (comparing themselves to others) and noncomparative (degrading the test on which one has failed) self-protection (Horton & Sedikides, 2009). Behaviors also include distorting past memories in order to protect self-esteem (Rhodewalt & Eddings, 2002), and simply providing negative evaluations and feedback to those that outperform them (Morf & Rhodewalt, 1993). Narcissists tend to seek out personal glorification and when those opportunities are lacking, contribute less energy to the task at hand (Wallace & Baumeister, 2002), overestimate their intelligence and physical attractiveness (Gabriel, Critelli, & Ee, 1994), and tend to overestimate their ability to perform (Farwell & Wohlwend-Lloyd, 1998; Robins, 2001). Based on these characteristics of a narcissist, and the tendency of the narcissist to engage in strategies that protect their concept of self, we propose that narcissists will have a higher level of self-efficacy.

Proposition 1: Narcissism is positively related to self-efficacy

## 2.2 Self-Reflections Affect on Self-Efficacy

Self-efficacy has an ingrained element of progression. As long as an individual continues to be successful and maintains the desire to continue to do the task, his or her self-efficacy should increase. This is regulated by the social cognitive triad (personal factors, behavior, and environmental factors) in which a person receives information on their abilities from the environment (affects of actions and responses of others) and from their own self-reflective activities that relate success or failure back to the individual (Wood & Bandura, 1989).

This paper will follow Boyd and Fales' (1983, p. 101) definition of reflection as:

. . . the process of creating and clarifying the meaning of experience (present or past) in terms of self (self in relation to self and self in relation to the world). The outcome of the process is changed conceptual perspective.

This indicates that a person uses reflection in order to understand themselves in the context of their surrounding environment, and to also monitor their interactions and perspective of self. "Self-reflection implies observing and putting an interpretation on one's own actions, for instance, considering one's own intentions and motives as objects of thought" (Von Wright, 1992, p. 61). Self-reflection would then be a key component of one's ability to learn from past mistakes and seek to make changes in action or in thought in order to avoid similar results in the future.

Much of the literature relating to reflection focuses on learning, particularly learning from experience (Roberts & Stark, 2008). If an individual is either unwilling or unable to internally process both present and previous experience in order to determine conceptual discrepancies in behavior or thought, then learning becomes more difficult (Boyd & Fales, 1983). Atkins and Murphy (1993) suggest that self-reflection is an important learning tool for professionals and identify the need for self-reflection to bridge the gap between practice and learning. More recently, Hays and colleagues (2002) studied the impact of physicians insight into their own performance. They concluded that there are indeed individuals whom are so lacking in their ability to internally analyze their performance that they may be unable to change.

In an evaluation of teaching practices of nurses, Scanlan and Chernomas (1997), identify that reflection provides an understanding of the individuals own behaviors and provides them with the opportunity to enhance their abilities.

Self-efficacy depends upon feedback, either directly from people involved, or from an individual's self-reflection (Roberts & Stark, 2008). People who are in professional services in which they do not receive much direct feedback about their day-to-day activities must rely, to a greater degree, on their own internal feedback systems.

Proposition 2: Individuals who participate in less self-reflection will have higher self-efficacy.

### 2.3 Locus of Control's Affect on Self-Efficacy

"The more that people believe that the causes of performance are uncontrollable, the lower and more resistant to change will be their self-efficacy" (Gist & Mitchell, 1992, p. 201). Locus of control concerns whether a person feels that they are in control or if external factors cause the outcomes in their lives. When a person has a high internal locus of control they believe that they are in control of what occurs in their life, where as a person with a high external locus of control believes that external forces are responsible for what occurs in their lives. From the perspective of self-efficacy, if a person has no ability to change what is occurring in his or her life, then his or her belief of what can be individually accomplished is left to fate instead of self perceived abilities. On the other hand, if a person has a very high internal locus of control, he or she may feel that anything can be accomplished because he or she is in control of everything (Marks, 1998; Rotter, 1990; Strauser & Keim, 2002).

In a (2002) study, Strauser and Keim investigated how work personality, defined as "one's self-concept as a worker, system of motivation for work and work-related needs and values" (p. 20), correlated with self-efficacy and locus of control. They found that people with higher levels of work personality also had internal locus of control and higher levels of self-efficacy.

While Phillips and Gully (1997) found the relationship between self-efficacy and locus of control to be positively correlated, Boone (1999) found that individuals with internal locus of control were better able to adjust to the needs of the prisoner's dilemma game indicating a better ability to perform based on the individual's ability to control the situation, and Chang and Ho (2009) discovered that students with an internal locus of control performed better.

These studies support the idea that people who believe they are in control of what occurs in their lives also have a greater propensity to feel self-efficacious. However, despite the fact that self-efficacy and locus of control are positively correlated, individuals who have too great a belief in their control of what is occurring around them may, in fact, produce negative outcomes. Anderson and colleagues (2005) postulate that either extremely high or extremely low levels of locus of control may result in a loss of reality which could explain a person's belief that they can control everything or nothing. Similarly, a (2001) study conducted by Helweg-Larsen and Sheppard, evaluated risk behaviors and concluded that behaviors involving higher risk were related to individual risk perceptions, and that those with higher levels of perceived control had a greater degree of optimistic bias. This again supports the logic that individuals with a higher degree of perceived control may in fact be more likely to overextend their abilities. Therefore we propose that:

Proposition 3: Internal locus of control is positively related to self-efficacy.

#### 2.4 Hyperbolic Self-Efficacy's Affect on Errors

As outlined in the previous sections, individuals must rely upon both their perspective of the environment around them and their own perception of self in order to monitor and correct behavior. When the individual either willingly or unconsciously miscodes, misinterprets or ignores data about their performance, issues relating to their ability to adjust their behaviors may result (R. Epstein, 2008). High levels of self-efficacy may limit the impact of negative information from the environment or from other people. Negative information may be filtered out while the individual only retains the positive or reinforcing information concerning the event; thus, increasing or maintaining their self-efficacy in the face of evidence that indicates otherwise (Gabriel et al., 1994; Horton & Sedikides, 2009; Rhodewalt & Eddings, 2002).



Additionally, they may fail to project an accurate belief in what they are capable of doing if they are unable accept key information concerning their abilities (Zuckerman, Knee, Kieffer, & Gagne, 2004).

Based on the research literature presented, we believe that the three dimensions of self-efficacy, 1) an individual's level of narcissism, 2) an individual's ability to self-reflect, and 3) the interaction of individual's locus of control, can ultimately lead to overstated or hyperbolic self-efficacy which could be defined as an individual's misconception and exaggerated estimation of their ability to perform specific tasks based on poorly or inadequately processed information. Therefore we propose:

Proposition 4: Self-efficacy will indirectly moderate the relationship between (a) narcissisms; (b) self-reflection; (c) internal locus of control on number of medical errors where:

Proposition 4a: Individuals who are highly narcissistic make a greater number of medical errors due to their hyperbolic self-efficacy.

Proposition 4b: Individuals who participate in less self-reflection make a greater number of medical errors due to their hyperbolic self-efficacy.

Proposition 4c: Individuals who have an extreme internal locus of control make a greater number of medical errors due to their hyperbolic self-efficacy.

## 2.5 Safety Culture's Moderating Affect on Self-Efficacy and Errors

There is no agreed upon definition of safety culture, but most agree that an employee's perceptions, attitudes and behaviors define the culture of safety (Fernández-Muñiz, Montes-Peón, & Vázquez-Ordás, 2007). After the Chernobyl incident, the Advisory Committee on the Safety of Nuclear Installations (ACSNI) defined safety culture as "the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management" (ACSNI, 1993, p. 27)

Individuals within an organization do not operate by their own whims of right and wrong. The organization installs various processes and procedures that guide employees on proper behavior and, if necessary, provide correcting mechanisms to ensure institutionalization of those behaviors (McDonald, Waring, Harrison, Walshe, & Boaden, 2005). This is key to the interaction between self-efficacy and performance, or in its negative connotation, errors.

When an organization is lax in its safety culture, through poor enforcement of policies and procedures, self-efficacy may play a larger role in explaining the variance between individual performance (Kathryn, Chou, & Stone, 2007). On the other hand, strict enforcement of policies and procedures may reduce the likelihood that great variance between individuals of differing self-efficacy will affect their performance (Bruns, 2009; Kathryn et al., 2007).

Proposition 5: Organizational safety culture moderates the relationship between medical errors and self-efficacy such that fewer medical errors will occur when the safety culture is stronger.

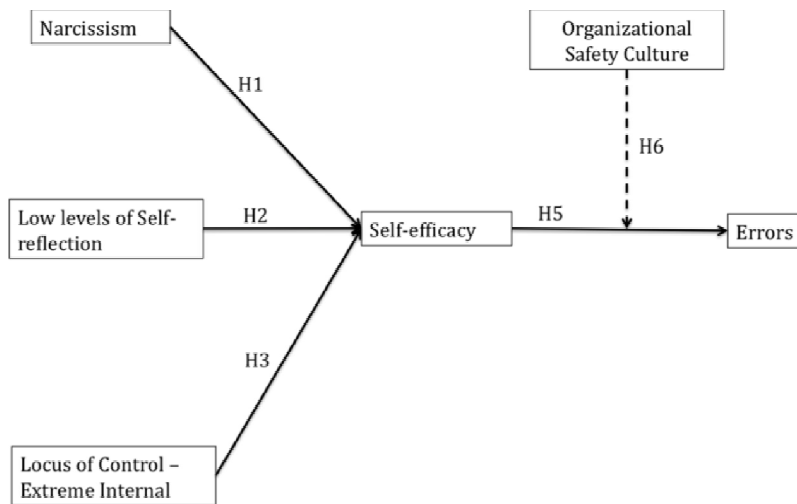


Figure 1: A Model of Factors Affecting and Moderating Self-Efficacy and Errors

### **3.0 Discussion**

The United States' healthcare system is experiencing transformational change as a result of the Patient Protection and Affordable Care Act of 2010 (ACA). As a result of ACA, the Centers for Medicare and Medicaid Services (CMS) proposed an inpatient Hospital Value-Based Purchasing (HVBP) program that recommended a financial-penalty policy for hospitals that do not meet specific performance standards for Medicare beneficiaries. For example, in fiscal year 2013 underperforming hospitals incurred a reduction of up to 1% in Medicare base reimbursements for inpatient services provided for all diagnosis related groups. The payment penalty for fiscal year 2014 will be capped at 2% and 3% in fiscal year 2015 (Kocher & Adashi, 2011).

The funds from this penalty will be used to pay incentive payments for hospitals participating in the HVBP Program.

The opportunity for a hospital to receive an incentive payment is believed to encourage hospitals to compete with one another based on selected quality and patient satisfaction performance measures; called a Total Performance Score (TPS). Hospital reimbursement will depend on performance scores of specific measures. In FY 2013, the Centers for Medicare and Medicaid Services (CMS) adopted 13 of 45 quality measures and nine patient experience measures (CMS, 2012). The measures are categorized into two domains: (1) Clinical Process of Care, accounting for 70% of the TPS; and (2) Patient Experience of Care, accounting for 30% of the TPS. The combination of these two domains comprises a hospital's TPS. Hospitals that have a higher TPS score will be considered high-performing and will receive a higher percentage of funding collected from the payment penalty, while hospitals with a lower total hospital performance score will be considered lower-performing hospitals and will see their reimbursement reduced under the HVBP Program.

Policymakers understand that higher unplanned patient readmissions are an important indicator of hospitals that are providing inadequate patient care (A. Epstein, Jha, & Orav, 2011). Unplanned hospital readmissions are common and costly to the United States healthcare system and are estimated to cost the Medicare Program approximately \$17 billion annually (Jencks, Williams, & Coleman, 2009).

Unplanned readmissions are typically caused by hospital acquired infections, premature discharge, lack of adequate discharge planning and coordination, poor communication, ineffective patient education, and prescription drug complications (Jencks et al., 2009). However, while much is known about the causes of unplanned readmissions as well as protocols for its reduction, unplanned readmissions remain a significant cost and safety burden on the healthcare industry. In an effort to reduce to improve patient safety and reduce cost, policymakers are using TPS and HVBP to transfer the financial burden of medical errors, such as unplanned readmissions, to hospitals. Therefore, it is especially important for hospital administrators to understand the impact of factors that impede clinician self-efficacy in an effort to improve the financial performance of hospitals under ACA.

Policymakers can encourage medical schools and continuing medical education programs to focus on factors that may improve self-efficacy, such as self-reflection. In addition, medical schools and hospital administrators may consider screening for clinicians that exhibit lower narcissistic behaviors and higher locus of control in an effort to improve hospital quality and ultimately financial performance. Furthermore, policymakers may encourage hospital accrediting organizations, such as The Joint Commission, to provide a greater focus on assessing organizational safety culture and to encourage interventions that will nurture a culture of patient safety and quality.

Finally, it is believed that clinicians with a higher sense of self-efficacy will desire data to aid in their self-reflection and their ability to improve and control quality care. Therefore, policymakers should also consider policies that encourage greater transparency within the healthcare system. Transparency in healthcare gained greater momentum as the industry was moving toward the theory of consumer-driven care where patients were encouraged to become knowledgeable and informed shoppers of healthcare. Transparency typically includes the availability of quality, cost, and consumer review data. Transparency is believed to facilitate the improvement of a hospital quality by influencing the utilization behavior of an informed consumer and encouraging a higher sense of self-efficacy for clinicians. Policymakers can raise public confidence in the healthcare system by developing policies that informs the public of important hospital and clinician quality indicators. Raising the public confidence as to the quality and value of the US healthcare system may ultimately lead to better decision making, an affordable delivery of care, and a healthcare system that is characterized by clinicians who are highly self-efficacious.

## **4.0 Conclusion**

In conclusion, while there is little debate that the US health system needs improvement, the manner of that improvement often involves, as it should, patient safety. Process improvement, TQM and various other remedies have been proposed as meaningful and affective deterrents to medical errors in hospital settings. However, the data indicates that errors are being made and the data points to human error as the key culprit. With this in mind, it is important for policymakers and hospital administrators to clearly understand the factors that might reduce or negate self-efficacy's impact on performance and its relation to hospital quality and patient safety.

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