

A peer-reviewed electronic journal published by the <u>Institute</u> <u>for Ethics and</u> <u>Emerging Technologies</u>

ISSN 1541-0099

23(1) – December 2013

Pharmaceutically Enhancing Medical Professionals for

Difficult Conversations

Gavin G. Enck INTEGRIS Baptist Medical Center Gavin.Enck@integrisok.com

Journal of Evolution and Technology - Vol. 23 Issue 1 - December 2013 - pgs 45-55

Abstract

Conducting "difficult conversations" with patients and caregivers is one of the most difficult aspects of the medical profession. These conversations can involve communicating a terminal prognosis, advance care planning, or changing the goals of treatment. Although they are challenging, the need for these conversations is underwritten by the tenets of medical ethics. Unfortunately, medical professionals lack adequate training in communication skills and overestimate their abilities in conducting difficult conversations. I suggest that one way to improve that ability would be the strategic use of pharmaceutical neuroenhancements. Pharmaceutically augmenting a professional's capacity for recognizing masked emotional expressions might conduce to his or her development of open and responsive communication with patients and caregivers. I conclude by examining the limitations and objections to this use of a *communication enhancement* by illustrating that it would still require the development of, and indeed a greater emphasis on, communication skills in medical education and training.

Conducting difficult conversations is one of the most challenging aspects of working in the practice of medicine. As I use the phrase, difficult conversations are discussions with patients and caregivers that center on terminal prognoses, advance care planning, or changing the goals of treatment. Not only is it an ethical necessity that medical professionals have these conversations, but – depending on the individual's communication skills – these conversations also directly impact the outcomes and well-being of patients and caregivers. Yet, medical professionals are given little education or training relating to communication skills. Instead, they must rely on mentorship from more experienced

professionals. Evidence indicates that many medical professionals overestimate their abilities in conducting difficult conversations.

In this paper, I suggest that at least one way to improve medical professionals' skills for conducting difficult conversations could involve the strategic use of pharmaceutical neuroenhancements. These "communication enhancements" would augment medical professionals' capacities for recognizing patients' and caregivers' emotions and emotional concerns, thereby making it more likely for them to develop open and responsive lines of communication.

Before examining the use of communication enhancements and difficult conversations with patients and caregivers, it is important to specify the scope of this paper. My goal is to offer a way in which the use of pharmaceutical neuroenhancements can be regarded as an option for medical professionals to improve their communication skills for difficult conversations. It is beyond the scope of the paper to engage with general arguments relating to the ethical or legal permissibility of using pharmaceutical neuroenhancement, *communication enhancements*, and do not address other types of pharmaceutical neuroenhancements (e.g., cognitive, memory, or moral enhancements). I assume for the sake of argument that communication enhancements are safe and modestly effective.

While I contend that communication enhancements can be regarded as one reasonable option for medical professionals to use, it is important to note that this is a rather limited claim. The implication is not that medical professionals have some sort of professional responsibility to use pharmaceutical neuroenhancements.¹ However, they do have a professional responsibility to conduct difficult conversations with patients and caregivers. In the following section, I examine the ethical necessity for medical professionals to conduct difficult conversations and the impact these conversations can have.

The ethical necessity of difficult conversations

The profession of medicine is underwritten by the patient-physician relationship: a fiduciary relationship in which a patient and physician are engaged in the process of healing (Cassell 2012; Pellegrino 2006).

Healing involves acts aimed at improving a patient's well-being (Cassell 2012). This is constituted by the physical, psychological, social, and relational aspects of his or her life. Accordingly, a nephrologist focusing exclusively on a patient's kidney function, a social worker helping patients with social resources and improvement of familial relationships, and a clinical pharmacologist narrowly focusing on the indications and counter-indications of a particular pharmaceutical treatment are all helping to improve a patient's well-being.

However, improving a patient's well-being is not simply about offering restorative or curative treatments. One fact of the human condition is death.² It is crucial to a patient's well-being to be told when a prognosis is terminal, when there is a need for advance care planning, or when the goals of care need to be changed from curative to palliative. Thus, the patient-physician relationship supports medical professionals upholding certain obligations and responsibilities that require having difficult conversations.³

The scope and magnitude of any obligation or responsibility of medical professionals is governed and guided by certain ethical principles, rules, and ideals (Beauchamp and Childress 2013; Gert et al. 2006; Jonsen et al. 2010; Oakley and Cocking 2001). The obligation to have difficult conversations is supported by the biomedical ethical principles of respect for autonomy, beneficence, and non-maleficence, and by the ethical ideals of trustworthiness, discretion, and compassion (Beauchamp and

Childress 2013; Oakley and Cocking 2001). The institutions and practice of medicine impose an ethical *and* legal responsibility to discuss terminal prognoses, advance care planning, and changing goals of treatment.

Nevertheless, it is important to note that a medical professional's responsibility for having difficult conversations with patients and caregivers is contingent on the appropriateness of the patient's or caregiver's situation. The particulars of the situation, including the information and ethical considerations that are relevant to the circumstances, determine the appropriateness of having these conversations. For example, disclosing to a caregiver that a patient has a terminal prognosis while the caregiver is currently driving to the hospital is, under most conditions, not appropriate. By contrast, although a patient may have a mental illness, as long as he or she has decision-making capacity, a healthcare professional has a responsibility to inform him or her (or the designated caregiver) of a terminal prognosis.

In sum: there is an ethical necessity, supported by biomedical principles, rules, and ideals, as well as by the institutions and practice of medicine, for medical professionals to have discussions with patients or caregivers – when appropriate – regarding terminal prognoses, advance care planning, or changing goals of treatment.

Impact of difficult conversations on patients and caregivers

These difficult conversations, whether done well or poorly, greatly impact patients and caregivers. For example, consider pediatric patients and their adult caregivers. When difficult conversations are done well, patients' psychological and behavioral outcomes are improved in addition to reducing surgical morbidity (Krahn, Hallum, and Kime 1993; Lynch and Staloch 1988; Quine and Pahl 1987; Kaplan, Greenfield, and Ware 1989; American Academy of Pediatrics 2001; American Academy of Pediatrics 2003). However, when these conversations are done poorly, not only are they likely to result in worse outcomes and cause distress for both patient and caregiver – they can also lead to an increased risk of legal action against medical professionals and their institutions. Therefore, it is of great importance for patients, caregivers, *and* medical professionals that medical professionals have the communication skills needed to conduct difficult conversations well.

Medical professionals: Lacking in education and training, but not confidence

At any rate, medical professionals have not been properly educated or trained in communication skills. Current medical education and training only minimally touch on issues regarding the role of emotions, relationships, and continuity of care for patients and caregivers (Jurkovich et al. 2000; Krahn, Hallum, and Kime 1993; Sharp, Strauss, and Lorch 1992; Lashley et al. 2000; Simpson et al. 2000; Young et al. 1998; Cheng et al. 1996; Byrnes et al. 2003; Corrigan and Feig 2004; American Academy of Pediatrics 2002). This is disturbing since communication between the medical professional and the patient is the most common intervention in all of medicine (Levetown 2008; Cassell 2012).

Instead of education and training, the medical profession relies on mentorship as the method for young practitioners to develop their communication skills. The experience of older professionals assists younger colleagues in developing communication skills. This approach assumes that a practiced medical professional can guide younger colleagues in learning proficient communication skills in a practical and appropriate way. Yet, evidence indicates that medical professionals' self-assessments of their communications skills are inaccurate because they overestimate their abilities in conducting difficult conversations with patients and caregivers (Ford, Fallowfield, and Lewis 1994; Hilden et al. 2001). So instead of guiding young professionals in the proper ways to have difficult conversations,

medicine's reliance on mentorship reinforces the likelihood that their communication skills will be, at best, greatly overestimated and, at worst, inappropriate.

In the following section, I suggest that the first step toward improving medical professionals' ability to conduct difficult conversations is to invest in education and training to develop empathic communication skills.

Empathy and empathic communication

Empathy plays a key role in communicating with patients and caregivers. Conceptually, empathy is defined as the ability to understand the feelings of others. It has an affective and a cognitive component (Simmons 2012). The affective, lower level, component of empathy is that a person, to some varying extent, feels the other emotions that another person is experiencing. This aspect is the basic component of empathy and nearly everyone is familiar with it. By way of illustration, Aaron Simmons (2012) refers to our moments of "feeling with others" (even if briefly and with less intensity) when we see someone win a gold medal in the Olympics or when we enter into the raw emotion of someone who has lost a loved one. The second, higher level, component of empathy is cognitive: an intellectual awareness of another person's internal states (Simmons 2012; Stueber 2006). While this component draws upon the affective component, at this level, a person is able to understand another person's emotions in certain situations or how a person's emotion or emotional reaction provides a reason for acting in some circumstances (Stueber 2006). It is possible to develop the cognitive aspect of empathy into an intellectual skill. For example, a medical professional understands that a patient's strong emotional outburst is the result of having been given a recent "bad" diagnosis. Having the intellectual skill of empathy allows an individual to retain a degree of emotional detachment from the person with whom he or she is empathizing (e.g., a medical professional can empathize with, and understand, the actions of a patient who has been given a terminal diagnosis, but without becoming so emotionally involved that he or she is unable to care for the patient) (Oakley and Cocking 2001; Simmons 2012).

A medical professional's empathy allows him or her to engage in *empathic communication* with patients and caregivers. *Empathic communication*, generally speaking, focuses on communicating with patients and caregivers in a manner that (i) seeks to identify the patient and caregiver's emotions or emotional concerns, (ii) responds to and addresses these emotions or emotional concerns, and (iii) explores the underlying basis of the emotions or emotional concerns, e.g., unmentioned or unaddressed issues (Back, Arnold, and Tulsky 2009). Empathic communication with patients and caregivers, in a way that achieves (i), (ii), and (iii), requires education, training, and practical skills (Bendapudi et al. 2006).

Communication enhancements

Teaching and training medical professionals in empathic communication is likely to be beneficial not only for patients and caregivers, but also for the professionals themselves. One way to facilitate this process is by the strategic use of pharmaceutical neuroenhancements. Pharmaceutical neuroenhancements are biomedical chemicals used to augment a range of cognitive and neurological capacities in a healthy person. For the purposes of this paper, since the specific pharmaceuticals in question are used to augment a medical professional's cognitive and neurological capacities related to having a difficult conversation, I refer to these pharmaceutical neuroenhancements as *communication enhancements*.

The communication enhancement I focus on is oxytocin. Evidence shows that administering oxytocin increases attachment bonding between mammals; for humans, it enhances a person's abilities to recognize certain social cues and information (Young and Wang 2004). Evidence indicates that some

of the social cues and information that oxytocin enhances are a person's capacities for recognizing familiar faces and accuracy in recognizing a person's masked emotional expressions (Schulze et al. 2011; Rimmele et al. 2009). In respect to communication, one study which focused on couples in argumentative discussions found that, when oxytocin was taken through a nasal inhaler, it reduced stress and increased positive communication (Ditzen et al. 2009). So for the sake of argument, I will assume that the use of oxytocin as a communication enhancement modestly augments a medical professional's capabilities for recognizing the social cues and information of patients and caregivers. Specifically, communication enhancement will work to identify social cues and information in a patient's or caregivers' masked emotional expressions and decrease stress during communications with patients.

It is reasonable to think that a medical professional who is better able to spot social cues, information, and masked emotional expressions is likely to be in a better position to identify, respond to, and explore the underlying basis of patients' and caregivers' emotions and emotional concerns. When discussing a terminal prognosis, advance care planning, or changing goals of treatment, patients and caregivers are undergoing emotional distress. It is imperative for professionals to be able to *accurately* identify and understand the emotions and emotional reactions of patients and caregivers during these circumstances. Moreover, it is reasonable to think that a medical professional whose own stress level does not escalate during these discussions is more likely to be open and responsive when communicating with patients and caregivers.

Consider, for example, that evidence shows pediatric patients' and adult caregivers' factors of interest, caring, warmth, and responsiveness are all predictive of effective communication between patient, caregiver, and medical professional (Simonian et. al 1993; Wofford et al. 2004; Heller and Solomon 2005). During difficult conversations, what caregivers want from a medical professional is not hope for a long-shot treatment, but rather recognition of their child's unique value as a person, and not merely a sick patient (Krahn, Hallum, and Kime 1993). What these pediatric patients want is not to be shielded from a terminal prognosis or changing goals of care, but to be given choices, even if the choice is not determinative of the final course of treatment or the eventual goals of care (Levetown 2008; McCabe 1996). A professional who is better able to identify these emotions or emotional concerns, while not letting the stress of the situation overwhelm them, is more likely to express interest, caring, warmth, and responsiveness when communicating with these patients and their caregivers. Therefore, using a communication enhancement is one reasonable option for improving communications with patients and caregivers during difficult conversations.

Limitations

Admittedly, the use by professionals of a communication enhancement for difficult conversations has many limitations. The first is that without any education and training in proper communication skills, the use of a communication enhancement is worthless. Just as a pill that makes a person smarter or more morally virtuous does not exist, there is no chemical or pharmaceutical that can make someone a better communicator (Smith and Farah 2011). Empathic communication skills require education, training, preparation, and practice (Epner and Bailey 2011). Thus, the use of a communication enhancement requires that medical professionals already have some education and training in empathic communication skills.

The second limitation is that the use of a communication enhancement is only a conducive condition – not a necessary or sufficient condition – for developing open and responsive lines of communication. From augmenting a professional's capabilities for recognizing masked emotional expressions and reducing his or her stress levels, it does not follow he or she will actually (i) be more empathic or (ii) have better communication skills. Augmenting a professional's capabilities for recognizing social cues

and information is not an enhancement of the cognitive or neurological capacities that underwrite empathy. To put this another way, it is possible for a professional to be able to identify a patient's emotional concerns, by recognizing social cues and information, and yet still not be able to understand or make accurate predictions about how this emotion is a reason for a patient's reaction in a given situation.⁴ Moreover, even if the use of communication enhancement were to augment a person's capacity for empathy, empathy is only a necessary condition, not a sufficient condition, for empathic communication. Having empathy is not the same thing as being able to communicate it proficiently and appropriately. These two limitations illustrate that the use of communication enhancements by medical professionals is not a panacea for improving their skill when having difficult conversations with patients and caregivers.

Objection

From these two limitations, a plausible objection follows: if a medical professional's use of communication enhancements is worthless without proper education and training in empathic communication and is only conducive – not necessary or sufficient – for developing open and responsive lines of communication with patients and caregivers, then what is really gained?

This objection, however, is misguided if it presupposes that a healthcare professional's use of a pharmaceutical for reasons of neuroenhancement is, in and of itself, a problem. A pharmaceutical neuroenhancement is but one option out of a range that the profession of medicine has available for facilitating medical professionals' improvement in conducting difficult conversations. It is reasonable and consistent with the argument in this paper that instead of a pharmaceutical neuroenhancement the profession of medicine chooses other, non-pharmaceutical, options for improving medical professionals' communication skills.

Instead of using communication enhancements, more emphasis might be put on early and continuing education and training in developing communication skills. Another option is that medical institutions could implement policies and procedures requiring that difficult conversations with patients and caregivers always be conducted with a trained social worker or counselor present. Or possibly, medical professionals could be required, by the profession or their institution, to discuss matters pertaining to terminal prognosis, advance care planning, or changing goals of care in their initial meetings with patient and caregivers. These are all legitimate options. However, it is also reasonable to hold that the use of pharmaceutical neuroenhancements could be one option available to improve medical professionals' communication skills relevant to difficult conversations.

Now, one reply to this response is to argue that even if one grants that pharmaceutical neuroenhancements are but one out of many options, it is still not clear what is gained by allowing communication enhancements as an option in this discussion. Evidence of the efficacy of oxytocin as a pharmaceutical neuroenhancement is not currently conclusive, and its use is not yet a feasible option. So, arguing for the use of a communication enhancement is merely an academic exercise, not a practical matter.

To respond, I agree that current evidence of the efficacy of oxytocin is not definitive and that its use is not currently a feasible option. Yet, these are not conclusive reasons to close down discussion of communication enhancements as a future possibility. The use of chemicals to augment or enhance our cognitive or neurological capacities is not a particularly modern issue. The latest applications of incredibly accurate pharmaceuticals to affect a range of human cognitive or neurological capacities – which, in turn, can alter, restore, or enhance a person's capacities, capabilities, attitudes, or dispositions – warrant careful examination and argument (Stein 2008). First, we can begin to survey the use of currently available pharmaceuticals that are already employed for enhancement by medical

professionals (e.g., methylphenidate, dextroamphetamine, or amphetamine as cognitive-enhancing drugs). In a recent study, out of 1,115 medical students 18 percent used cognitive-enhancing drugs (Emanuel et al. 2013). This study, along with others focused on undergraduate students, indicates that the use of cognitive-enhancing drugs for reasons of enhancement is often higher than many would assume.⁵ Second, careful examination and argument relating to the ethics of pharmaceutical neuroenhancement should assist to grapple with novel uses for these drugs. Compare the current debate about the permissibility of "love enhancement": the use of pharmaceuticals to strengthen or augment the chemical process in a person's brain in an effort to preserve a loving marriage as a couple ages or to protect their children from the harms of divorce. This appears to be a viable use of neuroenhancing drugs (Savulescu and Sandberg 2008; Earp, Sandberg, and Savulescu 2013). There is also current discussion relating to the use of pharmaceuticals for chemical breakups; here, a person might attempt to lessen or diminish their feelings of love to facilitate their escape from an abusive relationship (Earp et al. 2013).

Discussion of the ethics of pharmaceutical neuroenhancements has also moved from the level of individuals to that of institutional rules and policies. Lucke and Partridge (2013) have argued that, in terms of public health, the use of pharmaceutical neuroenhancement is the least effective and safe option for improving cognitive capabilities. The importance of all this inquiry and debate is that it helps to generate empirical data for a better understanding of neuroenhancing drugs and, importantly, encourages a dialogue about them. This dialogue is important because it will guide the agenda regarding policies and rules on the appropriate use of pharmaceutical neuroenhancements by medical professionals and others. It follows that the use of communication enhancements by medical professionals is one element in a larger discussion of the ethics of pharmaceutical enhancement.

Another reason that warrants consideration of the use of communication enhancements by medical professionals is ethical necessity. It is an ethical necessity for medical professionals to have difficult conversations and this provides a substantial consideration as to why the profession of medicine should always seek and evaluate means or methods for improving professionals' communication skills. Done poorly, discussions concerning a terminal prognosis, advance care planning, or changing goals of treatment negatively impact patients and caregivers. Since many medical professionals have not received proper education or training in communication, it is quite plausible, all-things-considered, that they are likely to have such an negative impact.

We should seriously consider the possibility that communication enhancements could quickly facilitate improvements in medical professionals' communication skills. The ethical necessity of conducting difficult conversations with patients and caregivers provides a reason for serious evaluation of the use of pharmaceutical neuroenhancements as an option for improving medical professionals' communication skills.

In this article, I argued that the use of a communication enhancement is one reasonable option for medical professionals because using it may be conducive to the development of open and responsive communication with patients and caregivers during difficult conversations. Still, whether one accepts this argument or not, it draws attention to the importance not only of the role of communication in the patient-physician relationship, but also the need for medical education, training, and practice aimed at developing communication skills. At the very least, the argument indicates a need for further development of, or a greater emphasis on, communication skills within the profession of medicine, whether achieved by pharmaceutical or other means.⁶⁷

Notes

1. Elsewhere, however, I have explored the question of whether medical professionals have a responsibility to use neuroenhancements in order to provide patients with the best possible care (Enck 2013).

2. This does not mean that death is always, intrinsically, a bad thing. Depending on a person's situation, his or her death may be good, e.g., passing away while surrounded by loved ones, or bad, e.g., a 14-year-old struck by a drunk driver. However, some may contend that all death is bad. I find this position to be empirically and ethically unreasonable; because of length constraints, however, I cannot address it in detail.

3. I use the terms "obligations" and "responsibilities" in the following way. Although obligations and responsibilities, broadly speaking, are both about certain things a person is ethically bound to do (or not do) an obligation is understood at higher level of abstraction, it is more general and indeterminate; whereas a responsibility is understood in a specific context, role, or institution and has more determinate content.

4. Incorrectly attributing a reason for why an agent acted, i.e. attribution error, is the basis for the philosophical position *situationalism*, which holds that character traits are not stable and cross-situationally consistent (Doris 1998, 2002; Harman 2000).

5. Consider that while only 20 percent of undergraduate students used cognitive-enhancing drugs, 90 percent of those students indicated that they did so for enhancement purposes (White et al. 2006).

6. This article was made possible because of a clinical ethics fellowship from the University of Texas MD Anderson Cancer Center in Houston. During this fellowship I had the privilege of learning from the finest medical professionals in the world. At MD Anderson Cancer Center, Daniel Epner MD deserves praise for demonstrating to me, as well as tirelessly attempting to teach others, that patient-centered communication is a skill which must be learned. Suresh K. Reddy MD, in the most difficult of situations, showed me why it is an ethical necessity for medical professionals to have these difficult conversations. Working with Martha Aschenbrenner and Luke Coulson I quickly learned that they do more good for patients and their families in a single day than I could ever hope to do in a career. At Children's Memorial Hermann Hospital the Chronic and Palliative Service for pediatrics and neonates (CAPS) team of Kristie Cullum RN, Patrick Jones MD, and Shih-Ning Liaw MD taught me that the noble-hearted always seek to alleviate suffering even in the most challenging situations.

7. This paper benefitted from the editorial work of Christina E. Guajardo, Brittany Campbell, and Elizabeth Enck. Russell Blackford's excellent comments and edits provided clarity to this article.

References

American Academy of Pediatrics, Committee on Hospital Care. 2003. Family-centered care and the pediatrician's role. *Pediatrics* 112(3 pt 1): 691–697.

American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health. 2001. The new morbidity revisited: A renewed commitment to the psychosocial aspects of pediatric care. *Pediatrics* 108(5): 1227–1230.

American Academy of Pediatrics, Section on Cardiology and Cardiovascular Surgery. 2002. Guidelines for pediatric cardiovascular centers. *Pediatrics* 109(3): 544–549.

Bendapudi, N., L. Berry, K. A. Frey, J. Parish, and W. Rayburn. 2006. Patients' perspectives on ideal physician behaviors. *Mayo Clinic Proceedings* 81(3): 338–344.

Bor R., R. Miller, E. Goldman, and I. Scher. 1993. The meaning of bad news in HIV disease: Counseling about dreaded issues revisited. *Counselling Psychology Quarterly* 6(1): 69–80.

Byrnes A., N. Berk, M. Cooper, and M. Marazita. 2003. Parental evaluation of informing interviews for cleft lip and/or palate. *Pediatrics* 112(2): 308–313.

Cassell, E. 2012. *The nature of healing: The modern practice of medicine*. Oxford: Oxford University Press.

Cheng T., J. Savageau, J. DeWitt, C. Bigelow, and E. Charney. 1996. Expectations, goals and perceived effectiveness of child health supervision: a study of mothers in a pediatric practice. *Clinical Pediatrics* 35(3): 129–137.

Corrigan J. and S. Feig. 2004. American Academy of Pediatrics. Guidelines for pediatric cancer centers. *Pediatrics* 113(6): 1833–1835.

Ditzen, B., M. Schaer, B. Gabriel, G. Bodenmann, U. Ehlert, and M. Heinrichs. 2009. Intranasal oxytocin increases positive communication and reduces cortisol levels during couple conflict. *Biological Psychiatry* 65(9): 728–731.

Doris, J. 1998. Persons, situations, and virtue ethics. Nous 32(4): 504–530.

Doris, J. Lack of character: Personality and moral behavior. Cambridge University Press, 2002.

Earp, B.D., A. Sandberg, and J. Savulescu. 2013. Natural selection, childrearing, and the ethics of marriage (and divorce): Building a case for the neuroenhancement of human relationships. *Philosophy and Technology* 25(4): 562–587.

Earp, B.D., O.A. Wudarczyk, A. Sandberg, and J. Savulescu. 2013. If I could just stop loving you: Anti-love biotechnology and the ethics of a chemical breakup. *American Journal of Bioethics* 13(11): 3-17.

Emanuel, R.M., S.L. Frellsen, K.J. Kashima, S.M. Sanguino, F.S. Sierles, and C.J Lazarus. 2013. Cognitive enhancement drug use among future physicians: Findings from a multi-institutional census of medical students. *Journal of General Internal Medicine* 28(8): 1028-1034.

Enck, G.G. 2013. Pharmaceutical enhancement and medical professionals. *Medicine, Health Care and Philosophy*. First published online August 7, 2013. DOI 10.1007/s11019-013-9507-z.

Epner, D. and W. Baile. 2011. Wooden's pyramid: Building a hierarchy of skills for successful communication. *Medical Teacher* 33(1): 39–43.

Fallowfield L. 1993. Giving sad and bad news. Lancet 341(8843): 476–478.

Ford S., L. Fallowfield, and S. Lewis. 1994. Can oncologists detect distress in their out-patients and how satisfied are they with their performance during bad news consultations? *British Journal of Cancer* 70(4): 767–770.

Gert, B., C. Culver, and K. Clouser. 1997. *Bioethics: A return to fundamentals*. Oxford: University Press.

Harman, G. 2000. Moral philosophy meets social psychology: Virtue ethics and the fundamental attribution error. In *Explaining value and other essays in moral philosophy*, 165–178. Oxford: Oxford University Press.

Heller K, and M. Solomon. 2005. Continuity of care and caring: What matters most to parents of children with life-threatening conditions. *Journal of Pediatric Nursing* 20(5): 335–346.

Hilden J.M., E.J Emanuel, D.L. Fairclough, MP Link, KM Foley, BC Clarridge, L.E. Schnipper, and R.J. Mayer. 2001. Attitudes and practices among pediatric oncologists regarding end-of-life care: Results of the 1998 American Society of Clinical Oncology survey. *Journal of Clinical Oncology* 19(1): 205–212.

Jurkovich G., B. Pierce, L. Pananen, and F.P. Rivara. 2000. Giving bad news: The family perspective. *Journal of Trauma and Acute Care Surgery* 48(5): 865–887.

Kaplan S.H., S. Greenfield, and J. Ware. 1989. Assessing the effects of physician-parent interactions on the outcomes of chronic disease. *Medical Care* 27(3): S110–S127.

Krahn G., A. Hallum, and C. Kime. 1993. Are there good ways to give "bad news"? *Pediatrics* 91(3): 578–582

Lashley M., W. Talley, L. Lands, and E. Keyserlingk. 2000. Informed proxy consent: Communication between pediatric surgeons and surrogates about surgery. *Pediatrics* 105(3 pt 1): 591–597

Levetown, M. 2008. Communicating with children and families: From everyday interactions to skill in conveying distressing information. *Pediatrics* 121(5): e1441-e1460.

Lucke, J., and Partridge, B. (2013). Towards a smart population: A public health framework for cognitive enhancement. *Neuroethics* 6(2): 419–427.

Lynch E., and N. Staloch. 1998. Parental perceptions of physicians' communication in the informing process. *Mental Retardation* 26(2): 77–81.

McCabe M., 1996. Involving children and adolescents in medical decision-making: Developmental and clinical considerations. *Journal of Pediatric Psychology* 21(4): 505–516.

Oakley, J., and Cocking, D. (2001). *Virtue ethics and professional roles*. Cambridge: Cambridge University Press.

Quine L., and J. Pahl. 1987. First diagnosis of severe handicap: A study of parental reactions. *Developmental Medicine and Child Neurology* 29(2): 232–242.

Rimmele, U., K. Hediger, M. Heinrichs, and P. Klaver. 2009. Oxytocin makes a face in memory familiar. *Journal of Neuroscience* 29(1): 38–41.

Savulescu, J. and A. Sandberg. 2008 Neuroenhancement of love and marriage: The chemicals between us. *Neuroethics* 1(1): 31–44.

Schulze, L., A. Lischke, J. Greif, S. Herpertz, M. Heinrichs, and G. Domes. 2011. Oxytocin increases recognition of masked emotional faces. *Psychoneuroendocrinology* 36(9): 1378–1382.

Sharp M.C., R.P.. Strauss, and S.C Lorch. 1992. Communicating medical bad news: Parents' experiences and preferences. *Journal of Pediatrics* 121(4): 539–546.

Simmons, A. 2013. In defense of the moral significance of empathy. *Ethical Theory and Moral Practice*. Published online March 13. DOI 10.1007/s10677-013-9417-4.

Simonian S., K. Tarnowski, A. Park, and P. Bekeny. 1993 Child-, parent-, and physician-perceived satisfaction with pediatric outpatient visits. *Journal of Developmental and Behavioral Pediatrics* 14(1): 8–12.

Simpson M., R. Buckman, M. Stewart P. Maguire, M. Lipkin, D. Novack, and J. Till. 1991. Doctorpatient communication: The Toronto consensus statement. *British Medical Journal*. 303(6814): 1385– 1387.

Smith, E., and M. Farah. 2011. Are prescription stimulants "Smart Pills"? The epidemiology and cognitive neuroscience of prescription stimulant use by normal healthy individuals. *Psychological Bulletin* 137(5): 717–741.

Stein, D. 2008. Philosophy of psychopharmacology. New York: Cambridge University Press.

Stueber K. 2006 *Rediscovering empathy: Agency, folk psychology, and the human sciences.* Cambridge, MA: MIT Press.

White, B., K. Becker-Blease and K. Grace-Bishop. 2006. Stimulant medication use, misuse, and abuse in an undergraduate and graduate student sample. *Journal of American College of Health* 54(5): 261–268.

Wofford M., J. Wofford, J. Bothra. S. Kendrick, A. Smith, and P. Lichsten. 2004. Patient complaints about physician behaviors: A qualitative study. *Academic Medicine* 79(2): 134–138.

Young K., K. Davis, C. Schoen, and S. Parker. 1998. Listening to parents: A national survey of parents with young children. *Archives of Pediatrics and Adolescent Medicine* 152(3): 255–262.

Young, L., and Z. Wang. 2004. The neurology of pair bonding. *Nature Neuroscience* 7(10): 1048–1054.