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Published in:
Affective determinants of health-related behaviour

DOI:
10.1093/oso/9780190499037.003.0019

University Press Scholarship Online
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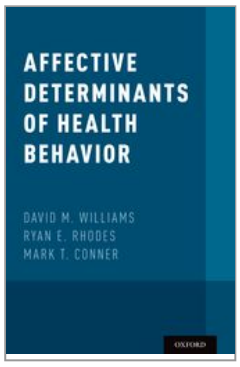

Affective Determinants of Health Behavior
David M. Williams, Ryan E. Rhodes, and Mark T. Conner

Print publication date: 2018
Print ISBN-13: 9780190499037
Published to Oxford Scholarship Online: May 2018
DOI: 10.1093/oso/9780190499037.001.0001

Emotions, Delay, and Avoidance in Cancer Screening

Roles for Fear, Embarrassment, and Disgust

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DOI:10.1093/oso/9780190499037.003.0019

Abstract and Keywords

Delay and avoidance are massive problems in cancer screening. While work continues to examine demographic and cognitive factors, emotions are central and likely causally implicated. In this chapter, a discrete emotions view of the origins of cancer screening is presented. After characterizing emotions, focus rests on evaluating the evidence regarding how and why three avoidance-promoting emotions (fear, embarrassment, and disgust) are implicated. The chapter describes the symptoms and medical examinations that elicit these emotions and suggests that people fail to screen for breast, colorectal, and prostate cancers because screenings elicit (or are anticipated to elicit) these feelings. It concludes by assessing some of the measurement, design, and interpretative challenges in the area, considers the sexual nature of many screens, and discusses the fact that screenings may elicit multiple emotional responses.

Keywords: cancer, screening, emotion, disgust, fear, embarrassment, worry, prostate, breast, colorectal, sexual health

The Origins of Delay and Avoidance in Cancer Screening—A Potted History

Delay and avoidance are major foci in cancer screening research, in part because population screening reduces morbidity and mortality. Delays and avoidance are, however, common and occur at multiple points, from delays in evaluating symptoms as potentially dangerous or in need of examination to delays in making appointments, screening, deciding on a course of treatment, or filling prescriptions. Delay can lead to worsening conditions, later stage diagnoses, and restricted treatment options, thus compounding the health, social, and economic costs of cancer.

Unsurprisingly, delay and avoidance are heavily overdetermined. Work has considered a range of predictors, from age, marital status, and income to culture and masculinity. Studies have evaluated system factors, geography, education, sexual orientation, race, and minority status. However, **(p.432)** while such factors may *predict* screening, they are limited in several ways. First, they typically explain a small portion of the variance; screening remains suboptimal even where it is free and convenient (Von Wagner, Good, Whitaker, & Wardle, 2013). While demographics are descriptively useful, they fail to explain *why* individuals delay or avoid and may be difficult to change (Consedine, Magai, Horton, Neugut, & Gillespie, 2005).

Such limitations have increased the focus on the psychological predictors of delay. Much work has been cognitively focused, examining knowledge (Weinrich, Weinrich, Boyd, & Atkinson, 1998), risk (Kunkel et al., 2004), and screening (Myers, Hyslop, Jennings-Dozier, et al., 2000) or treatment efficacy (Myers, Hyslop, Wolf, et al., 2000) perceptions. This psychological approach has tended to view people as “rational” decision-makers (Brock & Wartman, 1990) despite it being increasingly clear that decision-making of this kind does not often occur in practice (Broadstock & Michie, 2000).

The Origins of Delay and Avoidance—An Emotions Theory Perspective

In our view, emotions are integral to the processes by which people delay and avoid most experiences, including cancer screening. In this view, emotions constitute the primary, in-built motivational systems underpinning human behavior (Izard, 1991). Delay and avoidance are no different from other behaviors insofar as they are built on the actions of these same systems. More to the point, because some emotions evolved *precisely because* they motivate the avoidance of their elicitors and these elicitors are frequently present in cancer screening contexts, avoidance and delay are commensurately common. In what follows, we describe this approach more fully, concentrating on three emotions—fear, embarrassment, and disgust—that have documented or likely links to low screening.

In evolutionary-functionalist views, each emotion represents an adaptation that evolved to deal with a specific class of adaptive challenge or opportunity. So, for example, anger evolved to facilitate responding to goal blockages, sadness to situations involving current loss, guilt to situations **(p.433)** in which reparation was needed, regret to possible future losses, and so on. Emotions were selected to adjust our responses to these situational "classes" in ways that, on average, offered an adaptive advantage (Johnson-Laird & Oatley, 1992; Lazarus, 1991). Importantly, emotions may not always be "helpful" vis-à-vis current challenges (including cancer screenings). Emotions evolved in environments that likely differed from those encountered today, meaning that while the general pattern of changes has, on average, been advantageous, emotions may or may not promote behaviors that look "adaptive" now.

So, emotions evolved to facilitate adaptation to a *class* of situations rather than to specific stimuli (Johnson-Laird & Oatley, 1992). Fear facilitates adaptation to physical dangers by urging us to flee (Spoor & Kelly, 2004), while anxiety is useful for less immediate or overt threats (Marks & Nesse, 1994). Disgust aids adaptation to health threats through ejection and withdrawal (Reynolds, Consedine, Pizarro, & Bissett, 2013), and embarrassment motivates behaviors that reduce the chance of social exclusion (Consedine, Krivoshekova, & Harris, 2007). Importantly, the manifestations of emotions—in experience, physiology, cognition, signals, and behaviors—are similar despite variations in the elicitor. It does not matter whether embarrassment is elicited by genital inspections or something as mundane as forgetting a name. We blush (signaling an awareness of norm violation), feel a desire to hide or escape, and may plan future avoidance. Hence, although the "direction" of the response varies depending on what is being responded to, the components of the response are generic.

This commonality noted, *each* time we get emotional, the response occurs as a reaction to a specific situation, event, or elicitor. Responses are not "sourceless" but are "about something in particular" (Consedine, Adjei, Ramirez, & McKiernan, 2008; Consedine, Ladwig, Reddig, & Broadbent, 2011); behaviors, including those that are avoidant, occur vis-à-vis this something. There are specific aspects of cancer screenings that elicit avoidance-producing emotions, and it is these specific aspects we are motivated to avoid. In some senses, avoidance of the *entire* screening context may be epiphenomenal to the function of the emotion in motivating avoidance of specific fear, embarrassment, or disgust elicitors.

(p.434) Importantly in terms of screening, emotions motivate avoidance both immediately and in anticipation (Consedine & Moskowitz, 2007); anticipating experientially aversive emotion is a key driver of avoidance in health (Chapman & Coups, 2006; Sussner et al., 2009). Immediate responses facilitate the minimization of immediate harm, while anticipating that certain stimuli or behavior will increase or decrease the odds of certain feelings facilitates learning and future avoidance. The fact that the anticipation of emotion motivates behavior is important because it helps explain why screens that have never been experienced may be actively avoided (Reynolds et al., 2013).

In sum, while most emotions did not evolve to fulfill health-related functions per se (Consedine, 2008)—disgust being the exception—several emotions' core functions involve the immediate or anticipated avoidance of certain stimuli. These stimuli—threats to bodily integrity, nudity, norm violations, bodily products, and the like—are common in cancer screening. Thus, while emotions did not evolve to promote screening avoidance, they did evolve to promote avoidance. Differences between the situations emotions were "designed" to remedy and modern environments suggest "misfits" will occur and avoidance will be common.

Fear, Embarrassment, and Disgust Predict Delay and Avoidance in Cancer Screening

Historically, the literature linking emotions with cancer has concentrated on fear and embarrassment (Consedine & Moskowitz, 2007) but, until recently, has overlooked other avoidance-producing emotions such as disgust. Each of these emotions is discussed in this section.

Embarrassment and Its Links to Cancer Screening

Embarrassment evolved to help humans navigate social interactions by preventing norm violations and/or amending social relations after **(p.435)** transgressions (Keltner & Buswell, 1997). Embarrassment is characterized by our feeling awkward, foolish, and highly self-aware (Keltner & Anderson, 2000; Miller, 1992). It has a range of normative elicitors and follows norm violations (Keltner & Anderson, 2000) and/or negative social evaluation. Expressions signal awareness of the violation (Semin & Manstead, 1982) and reduce social judgment (Dijk, de Jong, & Peters, 2009); anticipated embarrassment motivates subsequent avoidance of behaviors or situations likely to elicit it (Consedine et al., 2011).

Embarrassment's normative elicitors are common in cancer screening—perceptions of physical ineptness or inadequacy (Keltner & Buswell, 1996), such as excess weight (Amy, Aalborg, Lyons, & Keranen, 2006) or the loss of control or poise (Miller, 1992) as with flatulence. Embarrassment is common when "failures" at privacy regulation occur (Keltner & Anderson, 2000); having genitals touched (Gascoigne, Mason, & Roberts, 1999) or discussing sexual issues (Ansong, Lewis, Jenkins, & Bell, 1998) in the presence of strangers or with observers present routinely elicit this feeling (Consedine, Krivoshekova, et al., 2007).

The threat of embarrassment may deter care-seeking for sexual examinations, even when symptoms are serious and patients know behaviors are important. Much of what is known is based on qualitative studies (e.g., Forrester-Anderson, 2005; Shaw, Williams, Assassa, & Jackson, 2000) that offer a conflicted picture. Of note, while physicians see embarrassment as important (Klabunde et al., 2005), patients may or may not. One study found that only 8% (fecal stool) and 7% (colonoscopy) reported embarrassment as a barrier (Nicholson & Korman, 2005). Such studies may tell us as much about reporting bias and implicit models as they do about the role of embarrassment in screening.

Survey-based studies suggest that actual or anticipated embarrassment predicts lower screening. Embarrassment predicts lower screening for prostate (Consedine, Horton, et al., 2007; Myers et al., 1996; Shelton, Weinrich, & Reynolds, 1999), breast (Consedine, Magai, & Neugut, 2004; Lerman, Rimer, Trock, Balshem, & Engstrom, 1990), testicular (Gascoigne et al., 1999), and colon/rectum (Consedine et al., 2011; Harewood, Wiersema, & Melton, 2002; Hou, 2005) cancers. Often, it does **(p.436)** so even when demographics (Shelton et al., 1999) and/or system factors (Consedine et al., 2011) are controlled.

However, while embarrassment predicts lower screening, several issues remain unclear. First, the specific aspects of screening that are embarrassing are unknown. Such aspects might include staff interactions, privacy or nudity, exposure to feces (Consedine et al., 2011) or penetration and homophobic concerns (Winterich et al., 2009). While it is the experiential aspect of emotions that the individual is motivated to avoid, the functional “aim” of the response is to avoid the elicitor. This critical issue is discussed more fully later. Second, as will become clear, cross-sectional designs predominate. One study found that induced embarrassment *caused* help-seeking delays for embarrassment elicitors (e.g., physical exams) (McCambridge & Consedine, 2014). Experimental designs are uncommon, however, and the interpretative limits of correlational designs coupled with heavy covariation among avoidance-producing emotions present an issue for fear, embarrassment, and disgust research.

Disgust and Its Links to Cancer Screening

Disgust is a health-related emotion (Consedine & Moskowitz, 2007; Curtis, Aunger, & Rabie, 2004), with disease or contamination avoidance functions (Davey, 2011; Oaten, Stevenson, & Case, 2009; Reynolds, Bissett, & Consedine, 2015). Originating in the need to avoid pathogen ingestion (Rozin & Fallon, 1987), disgust is a core part of the behavioral immune system (Schaller & Park, 2011). It is elicited by body envelope violations (e.g., internal exams, insertions), bodily products and waste (e.g., feces, blood), poor hygiene, and contamination threats (e.g., con tact with strangers) (Curtis & Biran, 2001). Such stimuli are common in cancer screening, creating a prima facie case for the involvement of disgust.

Like fear and embarrassment, disgust evolved to facilitate adaptation through avoidance and withdrawal (Reynolds, Bissett, Porter, & Consedine, 2016); it does so at both immediate and anticipatory levels (Reynolds et al., 2013). Immediate responses include withdrawal, gaze aversion, nose plugging, tongue protrusion and gagging, and increased **(p. 437)** salivation (Rozin, Haidt, & McCauley, 1999). Second, and despite evidence that our ability to forecast emotions is poor (discussed later), disgust motivates anticipatory avoidance, enabling us to deal with potential health threats preventatively (Schaller & Duncan, 2007).

Empirical studies of disgust in cancer screening are uncommon. A review of disgust in colorectal cancer (CRC) screening identified only nine disgust-related studies (Reynolds et al., 2013); disgust was almost always a barrier to screening. Reluctance to complete a fecal occult blood test (FOBT) is linked to the aversiveness of handling stools, storing samples at home (Jones et al., 2010), or posting them (Chambers, Callander, Grangeret, & O’Carroll, 2016). One large study of 60,000 adults from the Scottish National program showed that the “ick” factor predicted FOBT kit return over and above intentions (O’Carroll, Chambers, Brownlee, Libby, & Steele, 2015). Another found that a 4-item “ick” factor predicted FOBT intention better than either propensity or sensitivity (Chambers et al., 2016) and disgust predicts avoidance in chemotherapy patients (Reynolds, Bissett, Porter, & Consedine, 2016).

Again, however, cancer-screening research evaluating disgust is mostly cross-sectional and thus plagued by the same third variable issue confronting most research of this type. Immediate avoidance when disgusted is well documented. Less clear is whether induced disgust impacts decisions regarding health events that have yet to occur. One study had participants read vignettes highlighting disgust elicitors in CRC screening and treatment. Manipulated and trait disgust both predicted immediate avoidance and interacted in predicting *anticipated* avoidance; delay was greater among trait sensitive persons when disgusted (Reynolds, McCambridge, Bissett, & Consedine, 2014). A second study found that disgust predicted greater socially avoidant health decisions (Reynolds, Lin, Zhou, & Consedine, 2015). A final study found that disgust caused delays in sexual healthcare when seeking help would involve exposure to disgust elicitors (e.g., collecting genital discharge), but only among persons reporting poorer health (McCambridge & Consedine, 2014). Although these data are complex, an evidence base consistent with disgust deterring screening is emerging, although the specific cancer screens that are impacted and possible interventions remain unclear.

(p.438) ### Fear and Anxiety and Their Links to Cancer Screening

Fear and anxiety are among the most studied emotions, have been consistently linked to screening, and have been leveraged in health messaging for more than 60 years (Janis & Feshbach, 1953; Ruiter, Abraham, & Kok, 2001; Witte & Allen, 2000). Multiple aspects of cancer screening elicit fear, from the possibility of internal damage, disease, or a positive diagnosis, to the threat of invasive, painful, or intimate examinations. When a threat is detected and a person becomes fearful or anxious, cognitive processes shift to assess the threat’s source and physiological changes provide physical resources. In addition to encouraging immediate flight, fear and anxiety also guide behavior by motivating the subsequent avoidance of elicitors (Consedine, Magai, Krivoshekova, Ryzewicz, & Neugut, 2004). Importantly, the core response—immediate withdrawal or future avoidance—is similar notwithstanding whether elicitors are present or anticipated or whether they involve heights, animals, darkness, separation, or, we suspect, screening.

A huge literature implicates fear, anxiety, or worry in cancer screening (Consedine, Magai, Krivoshekova, et al., 2004; Dale, Bilir, Han, & Meltzer, 2005; Hay, Buckley, & Ostroff, 2005). The findings are complex, with links to both greater and lower screening. Work has converged on a view in which fear/anxiety predicts screening differently depending on the source of the fear (Consedine, Magai, Krivoshekova, et al., 2004). Greater cancer worry (an emotionally laden cognitive process) predicts greater screening (Consedine, Magai, & Neugut, 2004; Hay, McCaul, & Magnan, 2006) and intentions to screen (Vrinten, Waller, Von Wagner, & Wardle, 2015), while fear of screening predicts less (Consedine et al., 2008).

Interim Remarks

Overall, the literatures reviewed thus far are sufficiently developed to permit a few interim remarks. First, fear, embarrassment, and disgust all evolved to promote the avoidance of elicitors and they do so for both **(p.439)** immediate and anticipated events. Second, the prototypical elicitors for these emotions are common in cancer screening contexts; examinations and interactions “map” onto prototypical elicitors. Thus, it seems likely that experienced or anticipated fear, embarrassment, and disgust are etiologically implicated in health-related avoidance. There is, however, an ongoing failure to directly assess avoidance, a lack of experimental data, uncertainty around the specific aspects of intimate cancer screens that elicit avoidance-promoting emotion, and the problem of covariance. In the next section, we consider these issues more fully, concluding by offering directions for interventions and future study.

Areas for Future Development in Emotion-Screening Research

First, to substantiate the hypothesized avoidance-promoting role of emotions, researchers need to begin manipulating them and assessing screening. Studies routinely assume that the *absence* of screening (or a lower frequency) is indicating avoidance. For example, reports of greater embarrassment predict less frequent screening, a fact that is taken to indicate that embarrassment is causing lower screening. However, avoidance and delay are not directly assessed and causal proof is lacking. People cannot be assumed to be avoiding merely because they are not behaving. In addition to using objective measures, asking about delay/avoidance and the reasons for it seems an obvious solution to this problem. However, avoiding socially mandated behaviors is undesirable and likely prone to reporting biases. Our suspicion here is that such biases are more likely to skew reports regarding the *reasons* for avoidance rather than the fact of it per se. Patients may report delay or avoidance but be reluctant (or unable) to report that they avoided a mammogram, digital rectal exam (DRE), or FOBT *because* they were afraid, embarrassed, or disgusted. Normalizing affectively based avoidance in the research "dialogue," perhaps by noting that such avoidance is common, may be useful.

(p.440) Identifying the Source of Embarrassment, Fear, and Disgust

A second area in need of development involves designing studies that delineate the *specific* aspects of cancer-screening contexts that elicit emotion and are thus avoided. Because the fear literature is among the best developed in emotion-screening research, it is also a useful context in which to consider how delineating the *source* of emotions in health (their specific elicitors) may help. In brief, fear/anxiety data have been scattered, with findings showing positive, negative, or no links between fear-type constructs and screening. A decade ago, a review suggested that the association between fear/anxiety and screening is determined, in part, by the source of the fear and thus the extent to which the behavior will alleviate or increase felt emotion (Consedine, Magai, Krivoshekova, et al., 2004). A later study found that cancer worry predicted greater screening while screening fear predicted less screening *at the same time* (Consedine et al., 2008), perhaps suggesting that cancer worry predicts screening because people anticipate lower anxiety after screening. Because *cancer* is the source of fear in cancer worry, people engage in behaviors that subjectively reduce the threat—they screen. However, the threat in "fear of screening" is the screening context itself. Again, fear-based avoidance motivates the avoidance of the fear's source—people avoid screening (Consedine et al., 2008). Similar arguments have been put forth in embarrassment research:

> [I]t is insufficient to understand that people are embarrassed . . . and thus may not screen . . . we must know whether they are. . . . embarrassed by the prospect of having something inserted into their rectum, whether it is about being touched, whether it relates to obesity or their having poor skin, whether they worry about the thoughts the technician has during the procedure, about their response to possible pain . . . and so forth. (Consedine et al., 2007, p. 442)

(p.441) Data suggest that embarrassment may predict greater care-seeking, at least when patients are embarrassed by symptoms (Consedine et al., 2011). For example, men with more severe urinary symptoms report greater embarrassment, but it is those who were bothered by *socially observable* symptoms (e.g., wet pants, dribbling), that were more likely to visit a doctor. Thus, although it may lead to avoidance, embarrassment may not lead to the avoidance of screening. Where symptoms create embarrassment in daily life, persons will engage in behaviors they see as likely to reduce symptoms; screening should be greater. However, where embarrassment regards aspects of the examination process itself, screening should be deterred.

Findings consistent with this view in disgust are yet to be reported. One study of 200 Scottish adults found that a 4-item "ick" factor predicted FOBT intention better than either dispositional disgust propensity or sensitivity (Chambers et al., 2016), presumably because the items captured variance associated with the specific elicitors that were being avoided. Comparatively, however, the fear and embarrassment literatures provide good examples of how important it may be to identify the specific (affective) elements in screening contexts because it is these elements (rather than "the situation" per se) that the emotions are motivating us to avoid.

The Problem with Sex

A further point is that, insofar as they involve the examination of sexual characteristics, most screenings are fundamentally *sexual*; sexual stimuli are core sources of anxiety, embarrassment, and disgust. In many ways, this is not surprising. The body parts and secretions at the core of human sexuality (e.g., penis, saliva, vagina) are easily infected, carry disease risk, and are (thus) potent disgust elicitors (Rozin & Fallon, 1987). Because many screenings require contact with these stimuli (e.g., collecting stools) or body parts (genitals, anus, mouth), avoidance-promoting emotions are common. Contamination fears and disgust increase as a function of proximity (Rozin, Nemeroff, Horowitz, Gordon, & Voet, 1995) and sexual **(p.442)** stimuli are neurally processed like disgust in the absence of arousal (Borg et al., 2014).

Furthermore, cancer screens may elicit fears regarding any consequential treatments, many of which are detrimental to sexual functioning or body image. The possibility of disfigurement or damage to an erotic zone (e.g., mastectomy) or a treatment that weakens sexual functioning (e.g., lowered testosterone) may all contribute to disgust or embarrassment, triggering avoidance and delay. Perhaps particularly when people have restrictive moral values regarding sexuality, stranger-based contact with erotic zones or sexual body parts may increase the intensity of avoidance-driving negative emotions (Borg, de Jong, & Weijmar Schultz, 2011). Behaving in ways that are inconsistent with strongly held principles may both exaggerate emotional responses (and thus avoidance) and further shape moral values. Screening researchers need to remember that many common screens are sexual in nature, a fact that increases the likelihood of strong emotional responses and thus avoidance.

The Covariation Problem

Research at the emotions-screening intersection faces a singular challenge insofar as a single test or context can engender multiple emotions, any, some, or all of which may promote avoidance; this issue reflects “covariation” among negative emotions (Consedine & Moskowitz, 2007). Disgust and embarrassment co-occur (Rozin, Haidt, McCauley, Dunlop, & Ashmore, 1999), as do fear and disgust (Olatunji et al., 2009). Equally, given links between embarrassment and social anxiety (Jowett & Ryan, 1985; Miller, 1995; Sabini, Siepmann, Stein, & Meyerowitz, 2000), embarrassment likely shares elicitors with fear as well.

Although covariation is a problem for emotions-health research in general, it is a particular problem for those studying avoidance for the simple reason that fear, embarrassment, and disgust all evolved to promote avoidant responses. Most studies assess a single emotion and/or aggregate multiple emotional responses within “barrier” constructs (Menon et al., 2003; **(p.443)** Rawl et al., 2001). Summating discrete emotions makes it difficult to evaluate each emotion’s relevance or address questions of necessity and specificity. Screening research needs to assess multiple emotions and evaluate their unique contributions. Without this specificity, we cannot be sure which responses promote avoidance for which type of screen and, thus, which specific emotions our interventions should target.

Actual and Anticipated Emotions

Research in emotions and screening would benefit from greater clarity in the measurement of felt emotions versus emotions that are (cognitively) seen as likely to arise (anticipated emotions). Both forms of emotion are recursively linked to one another as well as to future behavior (Van der Schalk, Bruder, & Manstead, 2013). Although some longitudinal data suggest that prior experience only weakly predicts future screening (Drossaert, Boer, & Seydel, 2002, 2003), theory is clear in suggesting that while emotional factors predict behavior they also change in response to screening (Consedine, Christie, & Neugut, 2009). For example, women reporting a prior embarrassing cervical smear are more deterred from future smears (Orbell, 1996), suggesting that prior emotional experiences may shape both anticipated emotions as well as future behavior.

In theory, current emotional state may serve as an “affective cue” that makes particular aspects of a decision more salient (Peters, Lipkus, & Diefenbach, 2006). Elicited disgust, embarrassment, or fear may thus trigger individuals to be more attentive to relevant cues. A recent study found that manipulated disgust produced greater anticipated delay in response to bowel symptoms, and the possibility of disgusting symptoms is more likely to deter adherence, at least among persons high in trait disgust (Reynolds et al., 2014). Other work has noted that the effect of emotion on behavior may be stronger where patients have no recent frame of reference (Wong & Kwong, 2007); emotions may “fill the gap” when knowledge is incomplete.

(p.444) Importantly, the fact that people are routinely inaccurate in anticipating the affective consequences of behavior (or not behaving) does not prevent anticipated emotion from influencing decisions. We may overestimate the aversive emotion we expect to experience in screening contexts and behave accordingly. Regardless of whether affective forecasting is accurate or not, anticipation of aversive emotion is a key driver of avoidant behavior in health (Chapman & Coups, 2006; O’Carroll, Foster, McGeechan, Sandford, & Ferguson, 2011), although this distinction remains poorly investigated in cancer screening work.

Emotional Responses and Avoidance Among Physicians

Finally, disgust, embarrassment, and fear are not only relevant to avoidance and delay among patients; they also impact physician behavior. Anticipated regret influences physician decision-making (Sorum et al., 2004), and embarrassment may deter the taking of full sexual histories (Merrill, Laux, & Thornby, 1990) or error disclosure (Allman, 1998). Anxiety may lead physicians to request additional investigations, initiate referrals, and overuse resources (Anderson, 1999; Katz et al., 2005). Despite the nature of medical contact, disgust is infrequently studied among medical professionals. A few reports allude to disgust when caring for obese patients (Poon & Tarrant, 2009), in anal health (Hardy, 2010), and in medical career choice (Consedine, Yu, & Windsor, 2013). However, because disgust plays a key role in the stigmatization and avoidance of persons with detectable diseases (Park, Faulkner, & Schaller, 2003), its influence may be far more pervasive.

Although data are lacking, the elicitation (or anticipation) of embarrassment, fear, and disgust may influence clinicians' decisions and behavior in ways that are likely to reduce or prevent these affective states. Physicians may become decisionally, interpersonally, or behaviorally avoidant in ways that are detrimental to their capacity to deliver optimal care. Future work should clarify the areas of clinical decision-making, judgment, and behavior that are impacted by embarrassment, fear, and disgust and develop **(p.445)** interventions that "cue" physicians to the possibility that they become avoidant in some areas of their practice.

Concluding Remarks

Delay and avoidance are widespread problems in cancer screening and are associated with a range of negative health, social, and economic consequences. The approach put forward here suggests that people avoid disgust-, embarrassment- and fear-inducing cancer screens precisely because they are innately motivated to avoid these experiences. To an extent then, this view suggests that delay and avoidance of medical *situations* is a byproduct of the motivated desire to avoid certain emotional experiences. Because emotions constitute the primary motivational substrate for most human behavior, understanding their evolved design, normative elicitors, and associated behavioral tendencies has the potential to illuminate at least some of the causes of avoidance and delays in cancer-screening contexts.

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