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The Physical and the Emotional: Case Report, Mixed-Methods Development, and Discussion.

Permalink

<https://escholarship.org/uc/item/63z5n0js>

Journal

Psychodynamic psychiatry, 46(4)

ISSN

2162-2590

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Publication Date

2018-12-01

DOI

10.1521/pdps.2018.46.4.549

Peer reviewed



HHS Public Access

Author manuscript

Psychodyn Psychiatry. Author manuscript; available in PMC 2019 November 20.

Published in final edited form as:

Psychodyn Psychiatry. 2018 December ; 46(4): 549–574. doi:10.1521/pdps.2018.46.4.549.

The Physical and the Emotional: Case Report, Mixed-Methods Development, and Discussion

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Abstract

There is a growing recognition that emotional problems are important to physical health outcomes. In response, primary care clinics have introduced self-report checklists to identify patients with emotional disorders such as depression or anxiety. Yet psychodynamic theory posits that certain emotional problems may be unconscious and unspoken, and thus not discernible on self-report checklists, and studies show that checklists do not identify every patient who needs treatment. New clinical tools are needed to identify subtle and complex presentations. We aimed to develop an innovative mixed-methods approach characterizing different types of verbal expression of feelings, drawing on psychodynamic theory and empirical research. We outline the development of the mixed-methods approach, including our theoretical framework and use of semi-structured interview data from Partners in Care (PIC), a randomized controlled trial of quality improvement for depression. We then illustrate the approach with one case: an older female PIC participant who

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Conflicts of Interest: The authors report no financial or personal relationships between themselves and others that might bias this work.

screened positive for depression on all study self-reports. The approach delineates three qualitatively different categories of words—specific feeling words, vague feeling words, and physical words—that were quantified to define a measurable pattern for our participant. Clinicians could be trained to identify these categories of words in the context of a discussion of feelings to better detect and understand subtle emotional problems in patients who have difficulty talking openly about their feelings. Next steps include furthering face and construct validity and test-retest reliability, examining the prevalence of these patterns in a larger sample, and assessing correlates of patterns.

Keywords

psychosomatics; depression; emotions; speech; assessment

In recent years, there has been a renewed recognition that emotional problems are important contributors to physical health outcomes. For instance, depression has been shown to have large negative effects on health and physical disability in people across the world and with different demographic characteristics (Moussavi et al., 2007; Penninx et al., 1998). Anxiety and different ways of dealing with anger have also been shown to affect physical health outcomes including cardiovascular disease outcomes, musculoskeletal symptoms like chronic pain, gastrointestinal disorders, and even mortality (Denollet, Gidron, Vrints, & Conraads, 2010; DeSteno, Gross, & Kubzansky, 2013; Roest, Martens, de Jonge, & Denollet, 2010; Sibelli et al., 2016; Wrenn, Mostofsky, Tofler, Muller, & Mittleman, 2013).

To address emotional disorders in primary care clinics, researchers and health systems have focused on introducing self-report checklists and questionnaires to identify patients with conscious emotional disorders, such as depression or anxiety. For instance, the Primary Care Evaluation of Mental Disorders (PRIME-MD), developed in the 1990s, included a one-page patient checklist detailing symptoms of four groups of mental disorders (mood, anxiety, somatoform, and alcohol) followed by a 12-page clinician structured interview form for clinicians to follow up on positive responses on the checklist (Spitzer et al., 1994). Shorter and shorter checklists derived from PRIME-MD have subsequently been used to identify emotional problems in primary care, including a checklist with only two items, the Patient Health Questionnaire–2 Item (PHQ-2; Kroenke, Spitzer, & Williams, 2003). Large quality improvement efforts in primary care have introduced short-term psychotherapy or medication treatment for depression based on patient self-reports using these symptom checklists (Unützer & Park, 2012; Wells et al., 2000).

Yet researchers have identified limitations in the use of symptom checklists to identify emotional problems in primary care. In one large study in which primary care patients were screened with a relatively large 20-item depression checklist, 11.2% of patients were still thought to have significant depressive symptoms that could not easily be classified into a specific depressive category that would trigger a recommendation for treatment (Barrett, Barrett, Oxman, & Gerber, 1988). Another study indicated that primary care physicians had particular difficulty detecting mental health problems among African Americans, Hispanics,

and men, perhaps because these groups were less likely to openly discuss their emotional problems (Borowsky et al., 2000).

Identification of the emotional bases of physical symptoms also poses clinical challenges, especially when patients may not agree about their physical symptoms' emotional etiology. Psychodynamic theory posits that many emotional problems may be unconscious and thus unspoken, shrouded beneath layers of defense, unable to surface on self-report checklists or in response to direct questioning in a structured clinical interview. In *Symptoms, Inhibitions, and Anxiety*, Freud noted a number of psychosomatic symptoms that may serve as defensive operations, including vomiting, disinclination or weakness in walking, and fatigue (Freud, 1926). More recently, a large cross-cultural literature identifies substantial variation in the experience and expression of low mood (Dere et al., 2013; Kirmayer, 1989).

Moreover, research supports the assertion that some physical symptoms—especially chronic pain—may be understood as emotional experiences, which are generated and maintained due to intrapsychic conflict rather than physical injury to the body (Lumley et al., 2011). A new term, central sensitivity syndromes, refers to conditions thought to be mostly or entirely due to activity in the central nervous system (Yunus, 2007). These syndromes include numerous pain syndromes, such as fibromyalgia, chronic low back pain, pelvic pain, temporomandibular pain, and tension or migraine headaches, as well as chronic fatigue syndrome and several gastrointestinal disorders (Clauw, 2015; Kosek et al., 2016). Findings that the pain of social rejection activates the same brain regions as physically induced pain highlights the blurred lines between physical and emotional pain, and scientists have remarked that some types of physical pain may be purely brain-based and emotional, while most pain disorders include at least some emotional component (Eisenberger & Lieberman, 2004; Kross, Berman, Mischel, Smith, & Wager, 2011). In addition, epidemiologic evidence shows that stressful life events and traumatic experiences correlate with the occurrence of centralized pain disorders, suggesting that emotionally laden life experiences can generate and maintain physical pain (Generaal et al., 2016; Nicol et al., 2016; Varinen, Kosunen, Mattila, Koskela, & Sumanen, 2017; You & Meagher, 2016). Finally, group and individual psychodynamically oriented psychotherapy and journaling/diary interventions that involve decreasing intrapsychic conflict and encouraging healthy emotional expression are showing promise in new research to treat physical pain (Abbass, Kisely, & Kroenke, 2009; Burger et al., 2016; Gillis, Lumley, Mosley-Williams, Leisen, & Roehrs, 2006; Lumley et al., 2017).

Because of these insights, new clinical tools are necessary to elicit, distinguish, and characterize emotional problems that may be unconscious or unspoken. In this article, we describe the development of a novel technique, grounded in psychodynamic insights and recent scientific approaches to the assessment of emotions (Cowie et al., 2001; DeSteno et al., 2013; Ekman, 1997; Robinson & Clore, 2002; Scherer, 2005) that analyzes patterns of verbal expressions of emotion. We outline the stages of method development and review a case to describe the application of the technique. In addition, we propose ways in which the technique could be developed to improve clinical skills in identifying and evaluating emotional problems and in research studies to characterize emotional problems in more sophisticated and comprehensive ways than self-report checklists alone.

THE CURRENT STUDY

To develop this technique, we drew on existing literature to generate a theoretical framework. Then, we coded the use of emotion words in semi-structured interviews about depression drawn from an existing dataset collected as part of a multi-site trial of quality improvement for depression care in primary care settings.

Theoretical Framework

We reviewed literature of (1) psychodynamic theory on emotions and physical health and (2) empirical research on assessment of emotions and emotional expression.

Insights from Psychodynamic Theory.—In *Studies on Hysteria*, Breuer and Freud wrote that patients such as the famed Anna O. could be cured of disabling physical symptoms by recalling each instance of the symptom's occurrence back to the first instance and the feelings that accompanied each instance (Freud & Breuer, 1895). This was perhaps the first work in modern psychiatry to highlight the relationship between the emotional and the physical. Later, Alexander and French, major contributors to the field of psychosomatic medicine, introduced the concept of the corrective emotional experience, in which patients were re-exposed to painful emotional memories in therapy under more favorable circumstances to address physical and emotional symptoms (Alexander & French, 1946). Alexander and colleagues came close to generating widespread acceptance of the role of conflict and emotions in physical health in the 20th century (Frosch, 1990), but medicine has since moved away from incorporating these psychodynamic findings into clinical practice. However, the idea that emotions actually contain a physical/bodily component corresponds to the work of Habib Davanloo, who described how every emotion has three components—a cognitive component, a physical component, and an impulse—in developing the metapsychology of Intensive Short-Term Dynamic Psychotherapy (Davanloo, 2001). Davanloo also focused on encouraging patients to use specific language to describe their emotional experiences (Davanloo, 2001), which is integral to our approach, described below.

Insights from Empirical Approaches to Assess Emotions.—Perhaps the most widely used method of assessing emotions is through an individual's self-report (Robinson & Clore, 2002). Studies have used approaches that rely on open-ended self-report responses to direct questions about how individuals are feeling (e.g., Cowen & Keltner, 2017). Alternately, questionnaires such as the Patient Health Questionnaire–9 Item (PHQ-9; Kroenke, Spitzer, & Williams, 2001) and others derived from PRIME-MD (PHQ-8, PHQ-2; Corson, Gerrity, & Dobscha, 2004; Wells, Horton, LeardMann, Jacobson, & Boyko, 2013), as well as a range of other depression and anxiety questionnaires, ask patients to self-report and numerically rate the frequency of feelings of guilt, sadness, anxiety, or other emotions. Other constructs, with accompanying self-report questionnaires, have been developed to assess patients' overall comfort with emotional experience and expression, including alexithymia (Bagby, Parker, & Taylor, 1994), difficulties with emotion regulation (Gratz & Roemer, 2008), ambivalence over emotional expression (King & Emmons, 1990), emotional approach coping (Stanton, Kirk, Cameron, & Danoff-Burg, 2000), experiential avoidance (Gámez et al., 2014; Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011; Hayes,

Wilson, Gifford, Follette, & Strosahl, 1996), attitudes toward emotions (Harmon-Jones, Harmon-Jones, Amodio, & Gable, 2011), and affect control (Williams, Chambless, & Ahrens, 1997).

However, self-report measures of emotional experience or expression are not necessarily consistently associated with health outcomes. One example is the Toronto Alexithymia Scale–20 item (TAS-20; Bagby et al., 1994). Alexithymia is a concept denoting patients' difficulties with identifying and describing their feelings, as well as externally oriented thinking (Sifneos, Apfel-Savitz, & Frankel, 1977). Alexithymia is thought to be present in many patients presenting with physical complaints but who have emotional problems underlying their physical symptoms (Sifneos, 1973). While this would suggest that alexithymia would undermine health and help-seeking behaviors, studies do not show robust correlations between the TAS-20 and health outcomes (Kojima, 2012; Lane, Weihs, Herring, Hishaw, & Smith, 2015; Ogrodniczuk, Joyce, & Abbass, 2014). In addition, some have noted the circularity of asking someone who has difficulty describing emotions to describe their difficulties describing emotions on a self-report scale (Lane et al., 2015). In response, observer-rated scales, such as the Observer Alexithymia Scale (OAS; Haviland, Warren, & Riggs, 2000), have been introduced, but these rely on an observer's own ability to recognize emotional experience and are not widely used in research on psychotherapy or health outcomes.

Psychological tests also assess emotional experience, but not consistently with direct clinical applicability. For instance, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is an ability-based test designed to measure four “branches” of the construct of emotional intelligence: the ability to perceive emotions in oneself and others, the ability to use and feel emotions, the ability to understand emotions, and the ability to manage or modulate emotions (Mayer, Salovey, & Caruso, 2002). While it has been popularized, the construct of emotional intelligence has not been widely used in health outcomes research. Alternately, the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990) presents respondents with evocative interpersonal situations and asks for their emotional responses, scoring them on the frequency and complexity of emotion words they use (Lane et al., 1990). The developers of the LEAS have also designed a reliable computer scoring procedure that rapidly scores responses (Barchard, Bajgar, Leaf, & Lane, 2010). Unfortunately the LEAS has been associated with few health outcomes (e.g., Politi, Enright, & Weihs, 2007) and is still only available at a cost to users.

Most of the above methods, including self-report rating scales, observer-reported rating scales, and psychological tests, assess difficulties with emotional expression or experience generally. Yet it has been suggested that difficulties with discrete emotions, rather than emotions in general, should be a focus of further exploration (DeSteno et al., 2013). Paul Ekman has defined several basic emotions—including anger, sadness, joy, surprise, disgust, and fear—all of which are posited to have distinct physical manifestations, particularly on the face—and which can be identified universally by people from different cultural backgrounds (Ekman, 1992; Ekman & Friesen, 1971, 1978). In addition, Klaus Scherer described that all emotions contain several components, including physical sensations, in his component process approach to understanding emotions (Scherer, 1982, 1984).

There are numerous, often sophisticated and complex, methods from diverse fields that purport to assess discrete emotional states, usually by identifying which basic emotions are present. One prominent example is the Facial Action Coding System (FACS), which evaluates facial movements, and which has been frequently applied to determine what basic emotion is present (Ekman & Friesen, 1978). However, these methods require specialized training and detailed analyses of photograph or video data (Ekman & Friesen, 1978). In addition, there are some methods dating back to the 1930s that evaluate discrete emotions in speech (Cowan, 1936; Fairbanks & Pronovost, 1939). These methods typically use acoustic analysis but have been criticized for being “impressionistic,” “highly subjective,” and difficult to interpret (Cowie et al., 2001; Scherer, 1986).

Finally, computer engineers have recognized the practical importance of understanding emotional states in spontaneous speech and are working hard to develop automated assessment approaches (Cowie et al., 2001). For example, one possible application of using computers to identify specific emotions in spontaneous speech is to evaluate emotions of callers to call centers to assist in call triage (Lee & Narayanan, 2005). Yet engineering approaches typically rely, at least in part, on sophisticated acoustic information or other technology to implement (Banse & Scherer, 1996), which limits the applicability of these methods to the encounter between a clinician and a patient.

In sum, a variety of techniques from diverse fields has been investigated to assess verbal and nonverbal emotional expression. These approaches range from self-report and observer-rated scales to psychological testing, and include objective coding or computer-based procedures for analyzing nonverbal emotional expression or emotions in speech. Thus, many fields believe assessment of emotional expression to be important, but there is little agreement on how to go about it. In addition, none of the aforementioned techniques specifically focus on the clinical encounter. We set out to develop a technique that could be meaningful to researchers, clinicians, and patients and feasible in a typical clinical encounter.

Coding of Emotion Words in Speech

We obtained data from Partners in Care (PIC), a randomized-controlled trial of quality improvement for depression in 46 managed care clinics across the United States beginning in 1996. The design of PIC is described in K. B. Wells (1999), and the intervention rationale, design, and implementation may be found in Rubenstein et al. (1999). One-year results are described in K. B. Wells et al. (2000), two-year results are described in Sherbourne et al. (2001) and Schoenbaum et al. (2001), and five-year results in K. Wells et al. (2004). At 10 years, a structured survey was fielded, and among survey completers, all Latino and African-American participants and a stratified random sample of non-Hispanic White participants were invited to complete a series of three semi-structured interviews. There were 280 participants with at least one interview, which were audio recorded and had real-time field notes by trained interviewers. Interviews were structured with a series of openended questions followed by probes; and after the first interview, areas not covered in prior interviews were prioritized so that the series of interviews is more like one record. Interviews were conducted roughly one month apart. Interviews focused on the subjective experience of living with depression and the long-term effects of the quality improvement

interventions. Interviewers were generally experienced research interviewers, and some interviewers had clinical expertise.

We used purposive sampling to identify participants likely to provide numerous examples of a range of emotional experiences: participants age 65 years and older with chronic depression, defined as scoring depressed on all self-report checklists during PIC. We identified five participants who met these criteria. One respondent was excluded because she only had one interview. Our final sample included four respondents, each of whom had three interviews that we could compare. Recorded interviews were professionally transcribed.

To develop an approach with face validity, both academic and experienced community reviewers from different cultural backgrounds reviewed transcripts, collaborated to develop coding categories, and then coded interviews. Academic reviewers included a geriatric psychiatrist (BCY) and a psychiatrist/anthropologist (EB). Community reviewers included an African-American community leader (NM) and an Asian-American research assistant (DF).

Here we present preliminary findings from one respondent, to whom we will refer by the abbreviation, Ms. R (indicating that she was a respondent to the PIC follow-up interviews). What follows is a detailed case analysis highlighting the unique ways in which Ms. R tries to talk about her emotional experiences. Then, we introduce preliminary techniques we have used for assessing Ms. R's attempts at describing her emotional experiences that could have applicability for research and in the primary care clinical encounter. The original PIC study, including the acquisition of 10-year follow-up interviews, was approved by the Institutional Review Board (IRB) at the RAND Corporation. The RAND IRB later approved an amendment adding our new analysis and the application of our technique to one case. Nonetheless, details of Ms. R's history, including her age, have been altered to further protect her confidentiality.

CASE REPORT AND MIXED-METHODS DEVELOPMENT

Ms. R was a 77-year-old single, college-educated Caucasian female primary care patient who was enrolled in the Partners in Care (PIC) study. Ms. R was diagnosed with Major Depressive Disorder (MDD) upon her enrollment in PIC in 1996. Randomization took place at the clinic level, and Ms. R's clinic was randomized to an intervention group in which clinic personnel received training in administering 12 to 16 sessions of cognitive behavioral therapy (CBT) for depression. However, due to PIC procedures it is unknown whether Ms. R herself completed any CBT sessions. Ms. R did not receive antidepressant medication as part of the original study procedures. At year 10 of PIC, Ms. R was part of a subsample of participants who completed semi-structured interviews. In total, Ms. R completed three interviews, each approximately one hour in length.

Ms. R's Developmental History

Ms. R grew up in a two-parent household with a younger brother. She described her mother as "the most evil individual that has ever been my misfortune to encounter" and "sadistic, vicious." She says her mother "took great delight in hurting people, finding out what it is

you treasure, what it is you cherish, what it is that will kill you to lose, so she can break it, smash it, throw it away, give it away, make it disappear.” Her father divorced her mother and remarried after the patient and her brother left for college. Her father’s second wife was described as miserly and unwilling to assist the patient when she needed it. It is unknown from the available information whether her mother or father had any mental health diagnoses or received mental health treatment.

Ms. R had a college degree but was unable ever to secure employment in her field, which she attributed to discrimination against her because she was a woman. She instead worked for her father as a typist. She left her job 11 years prior to the interviews for unknown reasons and could not find other employment, which she attributed to discrimination against older applicants based on the fact she was over age 60 years at the time. She subsequently received social security disability payments. At the time of the PIC 10-year interviews, Ms. R was living in Section 8 subsidized housing and, although unsatisfied with her current living arrangement, found it financially infeasible to move. She described feeling discriminated against in finding new housing because many apartment complexes in her area did not accept Section 8.

Ms. R’s Interaction with the Interviewer

Ms. R described a lifelong pattern of feeling oppressed. This began with her “sadistic, vicious” mother and continued with her experience of being unable to obtain work in her field due to sexism, her inability to find new employment after she quit her job at age 60 years due to ageism, and suffering economic discrimination by feeling trapped in her current living situation. The rage and anguish in her recollections with her mother, alluded to but never expressed overtly in any of her three interviews, may have generated in Ms. R what Davanloo called defenses against emotional closeness (Davanloo, 2001), represented by Ms. R’s hesitance to reveal too much of her inner world and her emotional pain to the interviewer. One other respondent in our sample openly cried in her third interview, and two other respondents made overt statements that they benefited simply from the supportive interactions with the interviewers. However, this was not the case with Ms. R, who instead presented externalized material detailing of how she was oppressed and characterized her internal experience of that oppression as primarily physical rather than emotional.

Ms. R’s Verbal Interplay between the Physical and the Emotional

Ms. R reported a number of pain complaints, including pain in her knees, shoulders, multiple joints, and dental pain, as well as chronic fatigue. In addition, she reported depressed mood and problems with sleep, energy, appetite, and concentration in each of the three interviews. However, the time Ms. R spent remarking on her internal, subjective experience was overwhelmingly devoted to a discussion of her physical, rather than emotional, symptoms.

It was, in fact, how extensively Ms. R discussed her physical symptoms, such as physical pain, fatigue, and exhaustion, that was most conspicuous to our research team at the outset. Yet, based on our literature review and Ms. R’s words, we suspected that many of Ms. R’s physical symptoms were actually related to unspoken emotional problems. For example, in

one section, Ms. R states, “I’m in an apartment that I hate, and I can’t move out of it. And I’ve been waiting to get—biting my teeth, my fingernails, if I’m going to get a renewal notice for the Section 8 lease on this apartment. And it finally came Saturday and I’ve got 10 days to get that done. And I’ve been sick for so long, and feeling so bad.” In this example, Ms. R started by referring to an emotion—hate. Then, she referred to “biting my teeth, my fingernails,” which appeared to the team to refer to physical discharge of her emotional state. Ms. R then reported she had been “sick for so long,” which we interpreted as physically ill, but then finished by saying she had been “feeling so bad,” which was vague as to whether she meant feeling physically or emotionally (i.e., guilty) “bad.” This example highlighted the interplay between Ms. R’s use of words referring to physical experiences and words referring to emotional experiences.

Ms. R also used several brief, ambiguous phrases that attracted our attention for their mingling of the physical and the emotional. On two occasions, Ms. R described feeling “exhausted out of my mind.” While we took “exhausted” to refer to a physical experience, it appeared that Ms. R saw some, perhaps unconscious, pairing of her exhaustion to something emotional, or something in her “mind.” In another case, Ms. R reported, “I lie here all night and there’s too much pain and too many bad memories.” Although Ms. R frequently described her physical pain at night, because of the reference to “bad memories,” it is unclear whether Ms. R was referring to physical or emotional pain. She also referred on one occasion to experiencing “desperate nausea.” The word “desperate” clearly has an emotional connotation, whereas “nausea” is a physical experience. Whether Ms. R intended her phrase to imply that her nausea was making her desperate or whether she was desperate and thus nauseous was unclear. Yet the pairing of these emotional and physical words implied a connection in her mind between her emotional and physical experiences.

Ms. R’s Psychiatric Treatment

During the first two interviews, Ms. R was asked if she took “any prescription medications for personal, mental, or emotional problems, such as depression, anxiety, nerves, alcohol, or drugs?” Ms. R replied, “No. I just take [propoxyphene] pain killer at night sometimes.” In referencing a “pain killer” in response to a question on medications for emotional health problems, it is almost as if Ms. R recognizes that propoxyphene is to help with her emotional pain, but only on an unconscious or preconscious level.

In the third interview, Ms. R reported that her primary care provider had prescribed her an antidepressant, citalopram. She took one-half tablet and said, “within an hour, all of a sudden, it seemed like the pain in the hips and everything had just jumped up about three times as bad. And I was just out of my head. I couldn’t, I couldn’t, I was just rolling and tossing and moaning and groaning and I couldn’t rouse myself. I couldn’t wake up. I couldn’t open my eyes even. I was just goofy.” Therefore, she discontinued the medication.

Ms. R was also asked about seeking help or talking to “doctors or psychologists or self-help groups” about emotional, personal, or mental health problems. She denied that she had sought help and was subsequently asked by the interviewer, “What would make you go?” Ms. R replied, “I can’t think of anything. I mean, there’s nothing that anybody can do to fix it. If there were a possibility of fixing something, but there isn’t, so there’s no point.”

Quantifying Ms. R's Discourse: Ms. R's Responses to "Feeling Questions"

Over the course of three interviews, Ms. R was asked open-ended questions about her feelings on 13 occasions. Most often, Ms. R was simply asked, "And so now you feel what?" or, "And how does that make you feel?" On 8 of 13 occasions, she replied with a vague word/phrase such as, "Pretty bad," or, "Not very good." Following these vague words, on two occasions she moved on to describing physical experiences including feeling "tired," "worn out," or "fatigued." While a very open, general question on how Ms. R "felt" might have invited a discussion of physical rather than emotional experiences, on the second of these two occasions, the interviewer specified, "And *emotionally*, how do you feel the next day after a night like that?" [italics added]. To this question, Ms. R replied,

Pretty *bad*. I'm just not getting anything done. I don't have that much long left to go, and I've got a lot of stuff. It just piles up and piles up, stuff that I need to do, and I can't do it because I'm too *tired* to do it, because I can't sleep at night. Like last night, I didn't finally fall asleep until—I don't know—five or six o'clock, and then I sleep all day, and I'm not getting anything done. And even when I get up, I'm still *tired* and *worn out*" [italics added].

On only 2 out of the 13 occasions did Ms. R reply to an open-ended question with a word that referred to a specific feeling:

Example 1:

I And so now you feel what?

R Well, *uneasy*, whether he'll ever do anything in here again [italics added].

Example 2:

I How does it feel being able to get on the computer and knowing how to operate it now, though?

R Well, it's been very *frustrating* [italics added].

In the final three responses to open-ended questions about feelings, Ms. R did not describe her experience at all. Instead, she replied with thoughts or did not answer the question directly, as seen below.

Example 1:

I: How do you feel being cluttered in [your apartment] and not being able to afford any furniture or storage space?

R It's a nightmare.

In this case, it was unclear whether her apartment, her clutter, or her feelings were "a nightmare."

Example 2:

I How does that make you feel emotionally, feeling worn out all month and having everything hurt?

R I think, I guess that this can't go on like this.

Ms. R replied with a thought instead of a feeling.

Example 3:

I So, what does it feel like? Lost opportunity or discrimination?

R Yes.

Ms. R did not answer the question.

Quantifying Ms. R's Discourse: Feeling Words and Physical Words

We identified three types of words Ms. R used during the interview—what we have termed specific feeling words, vague feeling words, and physical words. Four coders with different expertise coded transcripts to identify the three categories. Coders subsequently met in small groups of 2–3 to come to consensus on what words should be included in each category. Each example was counted, and the total number of words in each category was determined. All members of the research team were involved in developing definitions for the codes and distinguishing one category from another.

Specific feeling words were defined as words used by Ms. R to describe specific internal emotional experiences that she had had in the past or was having during the interview. By specific, we mean that Ms. R used a word to describe a specific discrete emotion, such as anger, sadness, love, or guilt, etc. In regular team meetings, all team members had to be assured they knew exactly what emotion was being referenced in order to include the word as a specific feeling word. Although we tried to be inclusive, counting, for instance, words that could perhaps describe two emotional experiences in different contexts (e.g., frustration) or words that also referred to some intellectual processes (e.g., worry), vague words (e.g., “I feel good” or “I’m fine”) were not included as specific feeling words and coded as a separate category by reviewers. We also did not include negated feeling words (e.g., “I did not have any hope”) or Ms. R's descriptions of others' feelings (e.g., “She was so angry”). We did not include subjunctive mood (e.g., “I would be sad if that happened”) or future tense (e.g., “I will be sad”).

In contrast, vague feeling words were distinguished from specific feeling words by one principal criterion. Whereas specific feeling words referred to only one specific emotional experience, vague feeling words were words that could be interpreted as referring to several different emotional experiences. For instance, the words, upset, depressed, or stressed could refer to anxiety, sadness, anger, or perhaps several other negative emotional experiences. In particular, the word “depressed” was interesting to us. Whereas many might assume the word depressed indicated sadness, we found that Ms. R, a person who reported depressive symptoms at each study follow-up assessment over nine years, did not use the word “sad” on any occasion (see Table 1). Instead, she occasionally paired the term “depression” with

feelings of anger and frustration, or feeling scared. Extensive and repeated discussions of individual examples of words ensued by members of the research team to determine whether a word was specific or vague, and ultimately consensus was reached for each example.

Physical words were defined as words used to describe internal physical—rather than emotional—experiences. Examples include exhausted, tired, fatigued, nausea, and pain. We did count words that referred to physical experiences in particular parts of the body (e.g., “pain in the knees”). However, we did not count medical diagnoses (e.g., atrial fibrillation) or phrases that did not clearly describe her experience of a physical symptom. For example, in the phrase “my heart beat faster,” we did not include heart, beat, or faster as physical words, instead focusing on single words that described a physical experience. Similar to the specific feeling word category, we did not include vague physical experiences such as “My wrists went bad” as physical words. Nor did we include negated words, subjunctive mood, or future tense. Sometimes, context was helpful in making a determination as to whether a word referred to a physical or emotional experience. For example, hurt was classified as a feeling word if used in the following context: “My feelings were hurt.” But it was classified as a physical word if used as follows: “My back was hurt.” The three word categories are summarized in Table 2.

In Interview 1, Ms. R used 16 specific feeling words, 8 vague feeling words, and 43 physical words. Based on conventions in other literatures (Cowie et al., 2001), we present these as fractions of per 100 words, which allows for comparisons of word use frequency across different respondents and different interviews with different numbers of overall word counts. Therefore, Ms. R used 0.173 specific feeling words per 100 words, 0.087 vague words, and 0.465 physical words per 100 words, or 2.688 times more physical words than specific feeling words in interview one. Table 1 includes all examples of specific feeling words from Ms. R’s first interview, in the context of the phrase in which they were used. Ms. R’s other two interviews had similar results. In interview two, she used 0.279 specific feeling words per 100 words, 0.122 vague words, and 0.681 physical words, or 2.442 times more physical words than specific feeling words. In interview three, she used only 0.157 specific feeling words per 100 words and 0.217 vague words, but 1.161 physical words per 100 words, or 7.398 times more physical words than specific feeling words. The average pattern for Ms. R’s verbal expression of feelings across all three interviews is summarized in Figure 1.

DISCUSSION: CLINICAL AND RESEARCH IMPLICATIONS

Implications for Ms. R

In spite of participating in three lengthy interviews, which were designed, in part, to elicit Ms. R’s emotional experience, Ms. R spent far longer discussing her physical experiences compared to her emotional experiences. She used nearly three times as many words to describe physical experiences compared emotional experiences. In addition, in response to direct questions about her feelings, Ms. R was only able to voice a specific feeling word twice (uneasy = anxious and frustrating = angry) out of 13 occasions. Instead, Ms. R most commonly (8/13 times) replied to direct questions with vague, negatively valenced words that gave no indication as to the actual underlying feeling or feelings she was experiencing. Then, she frequently went on to describe her physical, rather than emotional, experiences.

Clearly, Ms. R had considerable confusion in determining for herself what was, in fact, emotional and what was physical based on our qualitative analysis. There were several examples of her using vague phrases with both emotional and physical words: “desperate nausea” and feeling “exhausted out of my mind.” She answered a question about psychiatric medications by reporting she took pain medications, “if you count that.” She reported severe pain symptoms in reaction to taking an antidepressant medication, citalopram. In response to open-ended questions about how she feels, Ms. R responded vaguely and then often resumed discussing her physical problems. Finally, Ms. R used nearly three times as many words to describe her physical experiences compared to her emotional experiences in each interview.

The attribution of Ms. R’s pain and other physical symptoms to physical rather than emotional causes clearly had treatment implications for her. Somewhere at some time, a primary care clinician had to recognize that Ms. R was in emotional distress, since she was enrolled in the PIC study for depression. But although she was in a depression study for 10 years and screened positive for depression six different times during the study, Ms. R was not taking antidepressants and not in psychotherapy at the time of her semi-structured interviews. Even the regular and thorough screening procedures in this depression study did not move her clinicians to provide her with ongoing treatment for depression. Ms. R was, however, prescribed opioid pain medications for physical pain. During one of her interviews, Ms. R describes falling in her bathtub while she was home alone. Ms. R recounts this anecdote immediately after discussing how she takes opioid pain medications. Therefore, it is unclear whether her fall might have been associated with side effects from these risky medications, whose risks are now entering the public consciousness as part of the “opioid crisis.”

Implications for Primary Care Clinical Practice

Yet if a primary care clinician were to encounter Ms. R in practice, what could he or she do with Ms. R? Given her poor experience with an antidepressant, citalopram, and her sense of hopelessness about the prospect of psychotherapy, Ms. R does not appear to be the type of patient who could simply be referred to a psychiatrist or psychologist embedded in a primary care clinic. First, she may not go, given her stated skepticism about psychological and psychiatric treatments, but she also may not adhere to treatment, even if she completes the consultation. In addition, Ms. R did not voice benefit from her interviews, whereas the other respondents in our sample reported benefit simply from talking to the PIC interviewers. In fact, in her final interview, Ms. R used an even greater ratio of physical words compared to feeling words than in her previous two interviews, suggesting that she was possibly more distressed by the end of the three interviews. Therefore, traditional talk therapy may not be the solution for Ms. R. At this time, it is unknown how she got referred to PIC in the first place, but she clearly did not benefit from 10 years of participation in PIC.

Increasingly, primary care clinics ask patients like Ms. R to complete checklists on conscious psychiatric symptoms such as depression or anxiety. Since Ms. R screened positive for depression at each of six time points in PIC, it is likely that she might even screen positive for depression on these checklists in her clinic. However, the complexity with which Ms. R presents, particularly with the muddle of her physical and emotional

experiences, suggests that perhaps Ms. R's problems would not be comprehensively addressed by a short course of psychotherapy for depression or an antidepressant medication. In the clinical situation, Ms. R may have needed a more comprehensive approach to treatment incorporating an understanding of her unconscious emotional problems' expression as physical symptoms.

A diligent primary care provider will also often ask patients like Ms. R open-ended questions about emotional well-being, emotional distress, or feelings. Yet, Ms. R is not likely to give a clear answer that would explicitly reveal her emotional difficulties. Recall the earlier example in which Ms. R was asked how she felt emotionally during the PIC interviews:

Pretty *bad*. I'm just not getting anything done. I don't have that much long left to go, and I've got a lot of stuff. It just piles up and piles up, stuff that I need to do, and I can't do it because I'm too *tired* to do it, because I can't sleep at night. Like last night, I didn't finally fall asleep until—I don't know—five or six o'clock, and then I sleep all day, and I'm not getting anything done. And even when I get up, I'm still *tired* and *worn out*" [italics added].

A primary care clinician is likely to feel helpless in the face of such a complex response to a simple question about feelings. Since psychodynamic theory holds many key explanations for the relationship between emotions and physical health, it is possible that medical students could be instructed in certain psychodynamic concepts to help them better detect their patients' emotional problems. Yet what aspects of psychodynamic theory should medical students learn? And how could psychodynamic theory be operationalized to really help physicians detect emotional problems? Currently, certification examinations such as the United States Medical Licensing Examination (USMLE) Step 1 exam assesses medical student knowledge of transference and countertransference and requires students to name certain defense mechanisms based on clinical vignettes (Le et al., 2018). Yet the limited list of defenses and typical sample questions are mostly aimed at improving medical student interpersonal effectiveness rather than teaching medical students how to detect subtle emotional problems (Medbullets, 2016). In addition, primary clinicians often have limited time to discuss patients' emotional health—these interviews likely elicited more information about Ms. R's history and development than what is available after a series of short primary care clinical encounters. Therefore, it is important to give primary care clinicians some practical, effective tools for listening.

Training clinicians to recognize specific categories of words that patients use in the context of a discussion of emotional problems or feelings is one possible place to begin. Teaching clinicians to recognize specific feeling words, vague feeling words, and physical words could help them listen better when they ask how their patients are feeling and make sense of complex statements like Ms. R's. Once a primary care clinician recognizes the emotional undercurrent of a patient's physical symptoms, this understanding could inform how the clinician approaches her over many visits, such as by talking about physical pain in ways that also incorporate space for emotional experience.

Primary care clinicians are trained primarily to listen to patients for content and information, rather than for subtle emotional information. While it is true that this approach identifies certain types of content—three categories of words—the point is to encourage clinicians to consider ways of listening that are about patterns of speech rather than the conveyance of certain types of information. This kind of “listening for experience” is not typically what primary care clinicians are trained for, and this approach highlights that listening for experience is a uniquely important skill.

We have had success in teaching this important skill to members of our research team. Interrater reliability testing on 20% of our data resulted in kappa statistics between 0.94 and 1.0 for all three categories. After learning the three categories of words, members of our research team reported informally that they could hardly listen to their friends or family without noticing the words they used to describe their experience. In addition, our research assistant reported that feeling words eventually came to “jump off the page” when reviewing transcripts. Team members described how they benefited personally from learning the categories of words, with one remarking that she felt that participating in this effort increased her “emotional awareness.”

Implications for Further Research

Currently, few objective methods exist in psychiatry or psychology to quantify emotional health. Similar to clinical practice, most treatment studies instead rely on self-report checklists such as depression scales like the Patient Health Questionnaire–9 item (PHQ-9; Kroenke et al., 2001) or the Beck Depression Inventory (BDI; Beck & Beamesderfer, 1974; Beck, Steer, & Carbin, 1988). Yet these checklists do not incorporate the complexity of human emotional experience, as they are influenced by patients’ abilities to report their emotional problems.

Our approach involves quantifying the number of words a respondent uses in each of three categories. Determining the number of specific feeling words, vague feeling words, and physical feeling words per 100 words used by a respondent in a semi-structured interview produces an objective metric that could be used to compare the discourse of different patients or of the same patient on different occasions. This metric could also be used to assess discourse on emotions for patients with different mental and physical diagnoses or to correlate the discourse with response to various treatments. The notion of an objective metric of emotional health is quite hopeful, but it should be noted that the psychometric properties of our approach are, as yet, preliminary. Additional work is needed to determine the face and construct validity and test-retest reliability of our approach. The approach could then be tested in larger samples to determine the prevalence of different patterns. Correlates of certain patterns could also be assessed to determine their impact. If effective, the approach has the potential to use practical psychodynamic thinking to advance research.

Acknowledgments

Dr. Yarns was supported by the VA Office of Academic Affiliations through the VA National Clinician Scholars Program, funding ID # TPH 65–005.

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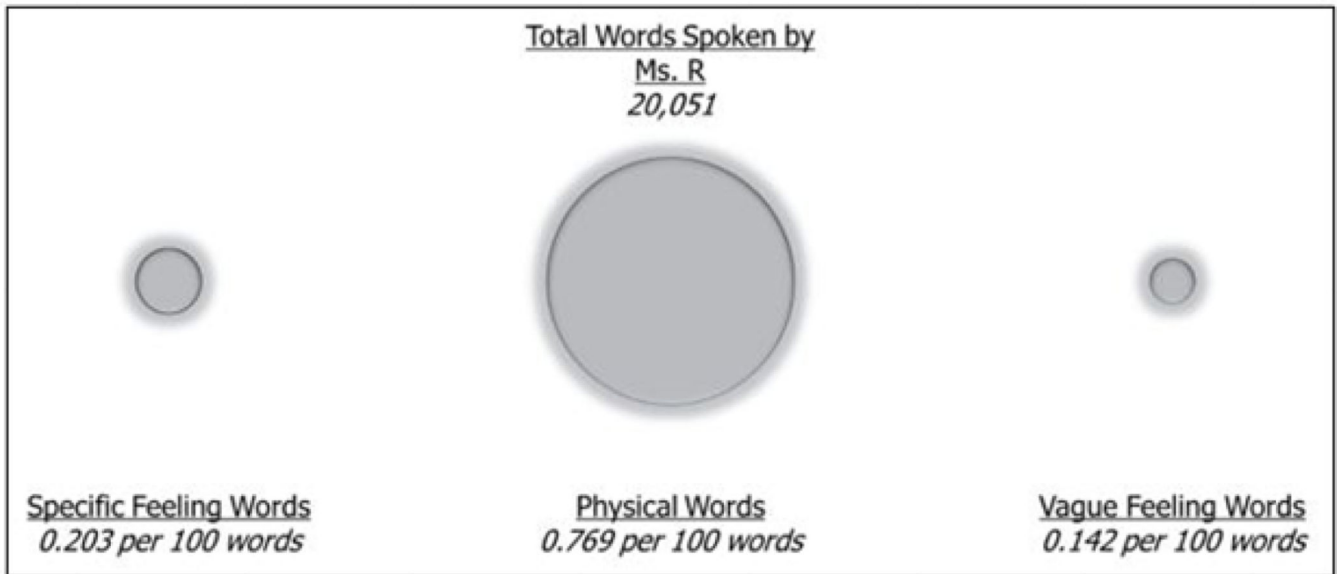


FIGURE 1.
(caption text) Ms. R's Verbal Expression of Feelings Across Three Interviews.

Table 1.

Specific Feeling Words in Context from Ms. R's First Interview

No.	Example
1	"had terrible <i>anxiety</i> "
2	"I'm in an apartment that I <i>hate</i> "
3	"I'm so <i>mad</i> "
4	"I get so <i>frustrated</i> "
5	"Yeah, very <i>angry</i> about that"
6	"I was so <i>angry</i> at myself"
7	"I was <i>astonished</i> "
8	"It was a big <i>shock</i> "
9	"chained to a typewriter...and <i>hating</i> every minute of it"
10	"I just went into <i>shock</i> "
11	"I'm <i>happy</i> for them"
12	"I was <i>glad</i> that—"
13	"It's so <i>embarrassing</i> "
14	"I really <i>miss</i> Homicide: Life on the Street"
15	"I <i>despised</i> him"
16	"I <i>hate</i> that man"

Note. The specific feeling word within each example is styled in italics, added by the authors.

Table 2.

Final Word Categories

Word Code	Definition	Examples
Specific Feeling Words	Describe one specific, internal emotional experience	Angry, frustrated, bitter, sad, disgusted, anxious, happy, surprised, guilty
Vague Feeling Words	Refer to emotional experiences but do not refer to one feeling specifically	Bad, down, upset, emotional, distraught, overwhelmed, stressed
Physical Words	Describe physical experiences	Exhausted, tired, fatigued, calm, strong, achy, woozy, wobbly, dizzy, stiff

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