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Spontaneous Remission of Cancer:
Theories from Healers, Physicians, and Cancer Survivors

By
Kelly Ann Turner

A dissertation submitted in partial satisfaction of the
requirements for the degree of
Doctor of Philosophy
in
Social Welfare
in the
Graduate Division
of the
University of California, Berkeley

Committee in Charge:
Professor Lorraine Midanik, Chair
Professor Andrew Scharlach
Professor Joan Bloom

Fall 2010

Spontaneous Remission of Cancer:
Theories from Healers, Physicians, and Cancer Survivors

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by Kelly Ann Turner

Abstract

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Kelly Ann Turner

Doctoral of Philosophy in Social Welfare

University of California, Berkeley

Professor Lorraine Midanik, Chair

BACKGROUND: Spontaneous Remission (SR) of cancer is defined as “the disappearance, complete or incomplete, of cancer without medical treatment, or with treatment that is considered inadequate to produce the resulting disappearance of disease symptoms or tumor” (O’Regan, 1995, p. 2).

PURPOSE: This study sought to answer two questions: 1) What causative theories do alternative healers, physicians, and SR survivors propose for SR?; and, 2) Do SR survivors have a strong Sense of Coherence (SOC)?

METHODS: Healers and physicians from 11 countries ($n_1=50$) and SR survivors ($n_2=20$) were interviewed in-depth; 17 of the 20 cancer survivors also completed an SOC scale.

RESULTS: Six treatments that may elicit SR emerged frequently among both SR and Healer/Physician subjects: 1) Deepening one’s spirituality; 2) Trusting in intuition regarding health decisions; 3) Releasing negative and/or repressed emotions; 4) Feeling love/joy/happiness; 5) Changing one’s diet; and, 6) Taking herbal/vitamin supplements. In addition, three underlying theories about health emerged: 1) In order to remit cancer, one must change the underlying conditions that allow it to thrive; 2) Illness=Blockage/Slowness; Health=No Blockage/Movement; and, 3) A body-mind-spirit interaction exists. SOC scale results tentatively indicate that SR subjects may have a higher SOC than general populations, but not than other cancer survivors.

IMPLICATIONS: Researchers are encouraged to use the results of this study to design research studies that assess the impact that these six treatments and three theories may have on cancer survival.

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Introduction

Cancer is currently the second leading cause of death in the United States, second only to heart disease (Xu, Kochanek, Murphy, & Tejada-Vera, 2010). Although the progression of cancer is well understood, its exact causes and cure still elude researchers (Edwards et al., 2010). Current allopathic medical treatments of the disease include surgery, chemotherapy, radiation, and hormone therapy, although these treatments are only successful in achieving a 5-year survival rate approximately 68% of the time across all cancers (Jemal, Siegel, Xu, & Ward, 2010).

Spontaneous Remission (SR) of cancer, sometimes called Spontaneous Regression, is defined as “the disappearance, complete or incomplete, of cancer without medical treatment, or with treatment that is considered inadequate to produce the resulting disappearance of disease symptoms or tumor” (O’Regan, 1995, p. 2). SR is a rare but verified event, occurring in as few as one in one million cases for certain types of cancer, or in as many as one in four cases for other types of cancer (Kappauf, 2006; Seachrist, 1993). The causes of SR are currently not well understood by allopathic physicians, although some tentative hypotheses have been proposed. For example, some researchers have hypothesized that SR may be caused by a sudden surge of the immune system, which itself may be brought about by a high fever, bacterial infection, blood transfusion, minor or major surgery, or antibiotic usage (Fozza et al., 2004; Heibel et al., 2004; Maywald et al., 2004; Niakan, 1998, 1999). On the other end of the spectrum, some psychologists have hypothesized that SR can be caused by major psychological changes, such as a sudden shift in coping mechanisms, life purpose, existential thoughts, or sense of transcendence (Huebscher, 1992; Schilder, De Vries, Goodkin, & Antoni, 2004; Ventegodt, Morad, Hyam, & Merrick, 2004; Wagner, 1998).

Because of its rarity and current inexplicability, no clinical trials have yet been conducted on SR. Rather, the literature is comprised of over 600 individual case studies (e.g., Lee et al., 2008; Mulder, Rosenberg, Storm-Bogaard, & Koole, 2009; Yutaka, Omasa, Shikuma, Okuda, & Taki, 2009, etc.), numerous literature reviews (e.g., Abdelrazeq, 2007; Challis & Stam, 1990; Oquinena, Guillen-Grima, Inarrairaegui, Zozaya, & Sangro, 2009, etc.), and one notable annotated bibliography (O’Regan, 1995). Despite this lack of clinical trials, the potential implications of studying SR are highly significant, because researching SR could lead to new insights into what causes cancer to grow or to remit. For example, if a physiological cause of cancer were to emerge from SR research, scientists would have a clear direction for developing novel pharmaceutical interventions for cancer. Alternatively, if a psychological cause of SR were to be uncovered through SR research, then medical social workers and psychologists would have a clearer direction for developing psychosocial interventions for cancer patients. Furthermore, if SR research were to reveal a healing mechanism that could be applied to other illnesses, the benefits of SR research would be even more far-reaching. Therefore, despite its rarity, SR is a worthy subject of research because of its potential impact.

The purpose of this exploratory study was to generate a wide range of theories for why SR of cancer occurs. This research goal was accomplished in two phases. In Phase I, three physicians and 47 alternative healers ($n_1=50$) from the U.S. and ten other countries were interviewed about how their particular healing traditions describe cancer, its cause(s), and the

way(s) in which SR of cancer might occur. In Phase II, persons who experienced SR ($n_2=20$) were interviewed about why they personally believe their SR occurred. In addition, after each Phase II interview, subjects were given a series of close-ended question to answer, as well as psychometric scale to complete. The close-ended questions collected demographic and descriptive information with the objective of further describing this unique sub-population in terms of psychological, medical, and social factors. The psychometric scale measured Phase II subjects' "Sense of Coherence" (SOC) (Antonovsky, 1987), a coping attitude that has been previously associated with good physical health (Hart, Wilson, & Hittner, 2006; Read, Aunola, Feldt, Leinonen, & Ruoppila, 2005; Suominen, Helenius, Blomberg, Uutela, & Koskenvuo, 2001; Surtees, Wainwright, Luben, Khaw, & Day, 2003). Therefore, it was hypothesized that those subjects who have experienced SR would have a high score on the SOC scale as compared to general populations. Finally, in order to improve the validity of this study, Phase II subjects were given the option of allowing the Lead Investigator to verify their cancer diagnosis with their oncologists.

Specifically, this study addressed the following two research questions:

1. What causative theories do physicians, alternative healers, and SR survivors propose for SR?
2. Do persons who have experienced SR have a strong 'Sense of Coherence'?

This study's design was guided by Salutogenesis, a framework that encourages inquiry into why people become well, as opposed to why they become sick (Antonovsky, 1987). Furthermore, the research methods chosen for this study, namely semi-structured exploratory interviews, close-ended questions, and a psychometric scale, were deemed appropriate given the lack of knowledge currently surrounding SR. This study was considered a necessary first step in moving the field of SR research out of its current realm of individual case studies toward the goal of designing systematic research studies, which may have the ability to uncover more definitively the healing mechanism(s) behind SR. What follows is a literature review of Spontaneous Remission of cancer, a discussion of the theoretical framework that guided this research, a description of the methods used in this study, an explanation of the project's findings, and finally a discussion of those findings.

Literature Review

This literature review describes the history of Spontaneous Remission (SR) research, the incidence of SR, reasons to study SR, physiological and psychological hypotheses for SR, the challenges currently facing the field of SR research, and the ways in which the current study addresses some of those challenges.

History of Spontaneous Remission (SR) Research

The National Cancer Institute states that Spontaneous Remission (SR) of cancer, also called Spontaneous Regression, has been present for as long as cancer has been recognized as a disease (Seachrist, 1993). One of the first anecdotal cases of SR was of St. Peregrine's famous bone tumor in the 13th century, which protruded through his skin and was diagnosed by physicians as cancerous before it spontaneously healed following a night of intense prayer (Pack, 1967). Partially documented SR case reports first began appearing in the medical literature in the early 19th century (Rohdenburg, 1918). In 1899, the first fully documented case report of SR was published in the medical journal *Lancet* (Bennett, 1899). This publication spurred an interest in SR and led to an increase in the submission and publication of SR case reports over the next decade. In 1906, at the first ever "International Conference on Cancer Research" held in Germany, a keynote lecture devoted entirely to the topic of SR was entitled, "Unexpected Recoveries from Cancer" (Czerny, 1907). During this lecture, oncologist and researcher Dr. Vincenz Czerny noted that SR often occurs after a surgical operation to de-bulk a tumor, and that the chances of a tumor experiencing a spontaneous regression may depend upon the tumor's specific constitution (Kappauf, 2006).

A decade later, in 1918, G. L. Rohdenberg (1918) published a collection of 302 potential SR cases, 70 of which he deemed to have sufficient medical documentation so as to be labeled definitively as initially malignant tumors that later spontaneously regressed. The remaining 232 cases still demonstrated SR, but lacked adequate documentation to rule out the possibility of initial misdiagnosis. It is interesting to note that among all 302 cases, the majority of the SR's occurred either after a surgery to partially de-bulk a malignant tumor, or after an acute fever (Rohdenburg, 1918). Following Rohdenberg's publication, case reports continued to appear in the literature over the next decade, and in 1927 the first case of SR of a neuroblastoma (cancerous brain tumor) was reported (Cushing & Wollbach, 1927). A year after this novel finding, the first case of SR of a lung metastasis (from a primary kidney cancer) was reported in the *Journal of Urology* (Bumpus, 1928); the SR of the metastasis occurred after the patient's one malignant kidney was surgically removed.

Case reports continued to be published in medical journals over the next four decades until 1966, when the field of SR research experienced a turning point with the publication of two monographs devoted entirely to the topic of SR (Boyd, 1966; Everson & Cole, 1966). Everson and Cole's (1966) systematic review of all published SR cases from 1900 to 1964 found 182 sufficiently documented cases of SR, according to the criteria that they set. The four most common types of cancer to spontaneously regress among these 176 cases were: 1) kidney cancer (renal cell carcinoma); 2) brain cancer (neuroblastoma); 3) uterine cancer (choriocarcinoma); and, 4) skin cancer (melanoma) (Everson & Cole, 1966). In their review, Everson & Cole (1966) also developed a standardized definition of SR, which they defined as "the partial or complete

disappearance of a malignant tumor in the absence of all treatment, or in the presence of therapy which is considered inadequate to exert significant influence on neoplastic disease” (p. 4). It is important to note that this definition does not require the regression to be permanent or complete. In other words, by choosing to use the phrase “partial or complete,” Everson & Cole implicitly included cases of SR where one, but not necessarily all tumors disappeared, or cases in which a metastasis disappeared, but the primary tumor did not. Their definition also implies that an SR may be temporary, followed by a relapse. Finally, it is also important to note that Everson and Cole (1966) decided to exclude SR cases of lymphoma or leukemia from their review, due to the natural fluctuations in the growth rates of these cancers; however, this decision was later reversed by subsequent reviewers.

Boyd’s (1966) monograph, published in the same year as Everson & Cole’s, was not a systematic review like Everson and Cole’s; rather, it simply contained 98 well-documented cases of SR that Boyd had selected from the literature as being prime examples of SR. Like Everson and Cole, Boyd also excluded SR cases of lymphoma and leukemia, again due to the natural fluctuations in their disease process. Interestingly, the two most common types of SR in Boyd’s monograph – retinoblastoma and breast cancer – were *not* among the four most common types of SR in Everson & Cole’s monograph. This difference emphasizes the importance of the selection criteria that one uses when determining which cases can be classified as SR cases.

After the publication of these two monographs, the number of published SR case reports doubled (Papac, 1996), implying that SR may have been occurring more frequently than had previously been presumed, and that physicians may not have been taking the time to submit official case reports to journals. In 1974, Everson & Cole hosted the first-ever conference on the topic of SR at Johns Hopkins University in Baltimore, MD (*Proceedings of a conference held at the Johns Hopkins Medical Institutions*, 1974). From 1974 until 1990, approximately 20 new SR case reports were published every year. Then in 1990, a systematic review was published that analyzed all cases of SR from 1900-1987 (Challis & Stam, 1990). Challis & Stam (1990) used the same definition set forth by Everson & Cole (1966), except that they chose to include SR cases of leukemia and lymphoma, thereby implicitly changing the wording of Everson & Cole’s (1966) definition of SR from ‘malignant tumor’ to ‘malignancy.’ Challis & Stam (1990) found what they deemed to be 489 sufficiently documented cases of SR. It is important to note, however, that only 123 of the 489 cases were leukemia or lymphoma cases, once again highlighting the power of selection and documentation criteria when determining which cases are sufficiently documented SR cases.

Then, in 1995, O’Regan (1995) performed an extensive search of the world literature, beginning with the earliest report of SR he could find up through 1990. According to his stricter documentation criteria, O’Regan (1995) determined that only 261 cases of SR were sufficiently documented, of which 30 were lymphoma or leukemia cases. The discrepancies in the total number of SR cases as determined by various reviewers will be discussed below in the section entitled, “Current Challenges.” O’Regan (1995) also formally redefined SR as follows:

“Spontaneous Remission is the disappearance, complete or incomplete, of cancer without medical treatment, or with treatment that is considered inadequate to produce the resulting disappearance of disease symptoms or tumor” (p. 2).

By choosing to use the word “cancer,” as opposed to Everson & Cole’s (1966) “malignant tumor” wording, O’Regan (1995) allows the term ‘Spontaneous Remission’ to include the unexplained disappearance, complete or incomplete, of 1) tumorous cancers; 2) non-tumorous cancers (e.g., leukemia); and, 3) metastases. In this author’s opinion, O’Regan’s new word choice is appropriate, because it correctly encompasses the three kinds of regressions that are being discussed currently in the SR literature. On a semantic note, however, SR researchers may want to consider replacing the words “disease symptoms” with “metastasis or non-tumorous malignancy,” so as to avoid the incorrect interpretation that SR may also include the unexplained disappearance of non-cancerous (albeit cancer-related) symptoms, such as fatigue, pain, etc.

More recently in the field of SR research, the second conference dedicated solely to the topic of SR was held in Heidelberg, Germany in 1997 (*Proceedings of a Conference on Spontaneous Remissions in Cancer*, 1997). In addition, approximately 20 new SR case reports are published in medical journals each year, and first-ever cases of SR are still appearing in the literature – such as Kappauf et al.’s (1997) publication of the first documented SR case of metastatic, non-small-cell lung cancer, or Isobe et al.’s (2009) publication of the first documented SR case of Natural Killer (NK) cell lymphoma. In summary, the history of SR research shows us that the field of SR research is still in its nascent phase, with only two conferences ever held on the subject, and with publications limited to case reports and literature reviews. However, the consistent frequency of case reports published annually shows us that SR is a persistent, albeit rare phenomenon. The following section will discuss the incidence rates of SR.

Incidence of Spontaneous Remission (SR)

Across all types of cancer, Cole (1981) estimated that SR occurs in one out of every 60,000 to 100,000 cancer patients. Other researchers have proposed more conservative estimates, such as one out of every 140,000 cancer patients (Chang, 2000), while still others have argued that SR is more prevalent than the number of published case studies suggests (Kappauf, et al., 1997, O’Regan, 1995). Such under-reporting may be due to the fact that not all physicians take the time to write and submit potential SR cases to medical journals, especially if they have no hypotheses to offer as to why the SR occurred. Furthermore, because SR is, by definition, *not* the result of adequate medical treatment, there may be cases of SR that remain unknown to physicians, e.g., if the patient stops his/her medical treatment and later experiences SR.

In addition, some researchers hypothesize that SR (in the absence of any medical treatment) may be a natural course for cancer, albeit a rare one. However, because most cancer patients elect immediate allopathic treatment, it becomes impossible for researchers to determine whether or not the cancer would have remitted on its own, without the treatment. For example, prior to the development of the bone marrow transplant, most patients died from Acute Myeloid Leukemia (AML), although some SR cases were reported. Since the introduction of the bone marrow transplant, however, the number of SR cases of AML has diminished, presumably because most people with AML are now electing to have a bone marrow transplant, which makes it impossible to know how many of those cases would have remitted on their own (Maywald, et al., 2004).

Similarly, when Japan increased screening for cancerous brain tumors (neuroblastomas) in infants, the number of reported cases doubled (Seachrist, 1993). Those new cases may never have been brought to anyone's attention without the additional screening; rather, the tumors may have spontaneously regressed on their own before the parents became aware of them (Seachrist, 1993). More recently, a longitudinal study in Norway compared one group of women who received three mammograms over a five year period to a control group of similarly-aged women who received only one mammogram at the end of the five year period (Zahl, Maehlen, & Welch, 2008). The cumulative incidence of breast cancer over the 5-year period was 22% higher in the screened group, which led the authors to hypothesize that the control group may have also developed breast cancer during that time, but that some of those tumors may have naturally regressed on their own, before the single mammogram was taken. Studies such as these suggest that one natural course of cancer may be that it occasionally regresses on its own, without any medical treatment. Nevertheless, this potential natural course of cancer is still very rare. The field of SR research would therefore benefit from trying to discover which *kinds* of tumors are likely to experience such natural regression, or under which *conditions* the tumors naturally regress.

In terms of SR incidence by type of cancer, Kappauf et al. (1997) notes that SR occurs in virtually every type of cancer. However, SR occurs more frequently in certain types of cancer and less frequently in others (Challis & Stam, 1990; Everson & Cole, 1966). General consensus among reviewers is that SR, whether temporary or permanent, occurs most frequently among the following five cancer types: skin cancer (malignant melanoma), kidney cancer (renal cell carcinoma), lymph cancer (low-grade non-Hodgkin's lymphoma), blood cancer (chronic lymphocytic leukemia or CLL) and childhood brain cancer (infant neuroblastoma) (Chodorowski et al., 2007; Kappauf, 2006; Papac, 1998). For example, an astonishing one in four melanoma patients will experience at least a partial SR of their primary tumor (Seachrist, 1993), and it is estimated that one in ten renal cell carcinoma patients who have metastases in the lung only will experience SR (Gaussmann, Imhoff, Lambrecht, Menzel, & Mose, 2006). Similarly, because SR is so typical for a very specific kind of infant neuroblastoma (Stage IV-S), it is now standard medical practice to delay chemotherapy in those cases in order to see if the neuroblastoma will regress on its own, which it does 60-80% of the time (Seachrist, 1993). On the other end of the spectrum, cases of SR have been reported least frequently for some of today's deadliest cancers, including lung, breast, colon, liver, and cervical cancer (O'Regan, 1995). For these cancers, it is estimated that SR may occur in less than 1 in 1,000,000 cancer patients (Kappauf, 2006).

Reasons to Study Spontaneous Remission (SR)

Although SR of cancer is a rare event, the fact that it occurs at all makes it a worthy subject of inquiry, because it shows that the human body is capable of controlling even very advanced cases of cancer (Papac, 1996). It necessarily follows, then, that one of the possible outcomes of studying SR is discovering a way to cure cancer (Papac, 1998), and perhaps to cure other diseases as well (O'Regan, 1995).

In addition to these noteworthy possible outcomes of studying SR, science also has a long history of learning from anomalous cases (Kuhn, 1962). In fact, SR research has already led to important discoveries about the nature of cancer. For example, when organ transplantation gained popularity in the 1970's, some transplant patients developed lymphoma (cancer of the

lymph system). However, when these patients were taken off of their immuno-suppressant drugs (which were needed to keep their bodies from rejecting the transplanted organ), the lymphoma often spontaneously regressed, which led researchers to conclude that a suppressed immune system is less able to destroy cancer cells than a strong immune system is (Seachrist, 1993). In another example of how studying SR can lead to a greater understanding of cancer, a spontaneous regression of breast cancer that occurred after a female cancer patient went into menopause (i.e., experienced a decrease in hormones) led researchers to make a connection between hormones and breast cancer (Kappauf, 2006). Discovering this connection contributed to the development of today's highly successful hormone-blocking treatments for certain breast cancers, such as the popular drug 'Tamoxifen' (Kappauf, 2006). Finally, the case of a metastatic gastric cancer patient who experienced SR after a surgery-induced bacterial infection (Rosenberg, Fox, & Churchill, 1972) has strongly contributed to the modern field of cancer immunotherapy, which injects small doses of bacteria into a tumor in order to stimulate the immune system to recognize and remove the tumor, as well as the bacteria (Rotrosen, Matthews, & Bluestone, 2002). These cases show that while the ultimate goal of SR research may be to uncover a cure for cancer, there are important lessons that SR research can teach us in the meantime about the nature of cancer cells.

Physiological Hypotheses of Spontaneous Remission (SR)

Researchers and physicians have proposed both physiological and psychological hypotheses regarding the cause(s) of SR. In terms of the physiological hypotheses for SR, most researchers suggest that *something* causes the body's immune system to surge and therefore dismantle the cancerous tumor and cells (Papac, 1996; Saleh et al., 2005; Seachrist, 1993). This makes sense in light of the fact that a typical person's immune system detects and destroys approximately 400 cancer cells every day; therefore, the immune system is certainly *capable* of removing cancer cells from the body (Dzivenu & O'Donnell-Tormey, 2003). In some cases of SR, the SR is preceded by an extremely high fever, which some researchers suggest may be what causes the immune system to surge (Niakan, 1998; Seachrist, 1993). In other cases, the SR has been preceded by a bacterial infection that was treated with antibiotics (Maywald, et al., 2004; Nagorsen, Marincola, & Kaiser, 2002; Trof, Beishuizen, Wondergem, & Strack van Schijndel, 2007); in these cases, it is difficult to discern whether the presence of the bacterial infection itself stimulated the immune system, or whether the antibiotics were key in allowing the immune system to surge. A similar problem exists in cases where the SR was preceded by a blood transfusion (Kappauf, 2006; Maywald, et al., 2004); in such cases, it is difficult to discern whether the new blood supply simply strengthened the immune system, or whether the new blood contained some novel type of cell which allowed the immune system to recognize and dismantle the cancer.

In other cases, the SR is preceded by a biopsy or surgery on the tumor itself. In such cases, researchers hypothesize that the biopsy or surgery causes bleeding in the tumor, which activates the immune system to clot such bleeding, as the immune system would do for any other wound in the body (Heibel, et al., 2004; Kappauf, et al., 1997; O'Regan, 1995). This effectively sends a large number of immune cells rushing to the site of bleeding (i.e., the tumor), thereby changing the environment of immune cells around the tumor in such a way as to perhaps promote tumor regression (Heibel, et al., 2004; Kappauf, et al., 1997; O'Regan, 1995). Other physiological hypotheses for SR propose that an SR occurs when certain elements that are

necessary for a tumor's survival are sharply reduced in the body. These elements may include: 1) a reduction in or blockage of blood supply to the tumor, e.g., due to a severe blood hemorrhage (Tocci, Conte, Guarascio, & Visco, 1990); 2) a reduction in the amount of lactic acid in the body (Niakan, 2001); or, 3) a reduction in blood glucose (Niakan, 1999).

Finally, some researchers have proposed that hormonal changes may elicit SR. For example, one published case (Antunez de Mayolo, Ahn, Temple, & Harrington, 1989) reported the SR of leukemia immediately after a woman gave birth, an event which obviously involves significant hormonal changes; however, three months later she presented with "massive, painful, leukemic infiltration of the breasts as initial manifestation of relapse, followed by systemic symptoms of leukemia" (p. 1621). The fact that her leukemia spontaneously regressed after childbirth – a hormonally-charged event – and then recurred first in her breasts – a highly hormone-sensitive organ – led the author of the case to hypothesize that large hormonal changes were somehow affecting the leukemia (Antunez de Mayolo, et al., 1989). Similarly, another researcher has hypothesized that a severe reduction in T3 (a thyroid hormone) may lead to the SR of lung cancer, and that reduced thyroid levels may be applicable to all types of cancer in terms of eliciting SR (Herbergs, 1999).

In summary, the physiological hypotheses that have been proposed regarding the causes of SR include either events that lead to a surge in the immune system (e.g., fever, antibiotic use, surgery/biopsy, blood transfusion, etc.), thereby allowing the immune system to dismantle the tumor on its own, or events that lead to a reduction in something that the tumor needs for survival (e.g., blood supply, lactic acid, thyroid hormones, blood glucose, etc.), thereby 'starving' the tumor until it collapses and dies. Most of these hypotheses, however, are weakened by the fact that thousands of cancer patients get fevers, antibiotics, blood transfusions, surgeries, or biopsies every day, yet only a few of them experience SR. This fact begs the question: Why do fevers, antibiotics, transfusions, etc. not lead to SR every time? In other words, what were the precise conditions in the person's body at the time of fever/surgery/etc. that allowed an SR to occur for that patient? These are the kinds of questions that are currently occupying physiologically oriented SR researchers.

Psychological Hypotheses of Spontaneous Remission (SR)

In addition to these physiological hypotheses for SR, psychological hypotheses have also been proposed. Various qualitative studies, which involved interviewing persons who have experienced SR, found that many SR patients experienced a profound psycho-emotional shift just prior to their SR. For instance, Schilder et al. (2004) report that, prior to experiencing SR, cancer patients are often pushed beyond their typical coping mechanisms into "a wider set of characteristics than [is] normally accessed" (p. 288), which then gives them access to intensely poignant activities and experiences. Another qualitative study found that "recovery of the human character and purpose of life" often precedes SR (Ventegodt, et al., 2004, p. 362), while yet another study found that transcending the implications of one's cancer diagnosis and therefore deciding to live a full life often precedes SR (Huebscher, 1992). Finally, one study reported that persons who experienced SR went through profound changes in existential and spiritual thoughts prior to their SR (Wagner, 1998).

Until recently, most physiological researchers would not have believed that a psychological change could lead to a physical change as significant as SR. However, recent

developments in the field of Psycho-Neuro-Immunology (PNI) indicate that psychological changes can produce significant chemical changes in the body, especially regarding the amount and type of hormones that are released by the pituitary and pineal glands (Pert, 1997). Such hormonal changes can have a “domino effect” in the body, leading to significant changes in various physiological systems, including the immune system (Maier, Watkins, & Fleshner, 1994). Therefore, discoveries from the field of PNI may be able to link the psychological changes that often precede SR with the subsequent physiological remission. Because of this, SR researchers may want to consider psychological as well as physiological changes that may elicit SR. For example, in Kappauf et al.’s (1997) article describing the first-ever SR case of metastatic, non-small-cell lung cancer, the author discusses only the biological mechanisms that may have elicited the SR. Although the author mentions briefly that, prior to the SR, the patient completed his last will and testament – an event of high emotional significance that may have allowed the patient to face his fear of dying – the author of the article fails to comment on this major psychological event or its potential contribution to the SR (Kappauf, et al., 1997). It is examples like this that highlight the need for SR researchers, both physiologically and psychologically oriented ones alike, to consider factors outside of their own field when hypothesizing possible causes of SR, and to consider making the field of SR research a multi-disciplinary one.

Current Challenges

The lack of certainty in the incidence rates of SR, as well as the discrepant totals of SR cases in systematic literature reviews, highlight a major problem in the field of SR research – namely, that a clear set of criteria to determine whether or not a case is considered a sufficiently documented case of SR is severely lacking. Everson & Cole (1966) greatly standardized the field of SR research with their formal definition of SR in 1966, although they chose not to include lymphoma or leukemia SR cases in their review, a decision reversed by subsequent reviewers. In addition, Everson & Cole (1966) did not set clear enough guidelines for what is considered “sufficient” documentation of an SR. Today, the primary reason for the discrepancy in the total number of SR cases is that reviewers determine their own criteria for what is considered sufficient documentation (Kappauf, et al., 1997). For example, Papac (1996) comments, “[My] review of the [SR] literature reveals reported cases...in which documentation of metastases is questionable, and some cases in which therapy may have played a role” (p. 395).

To complicate matters, SR often occurs after a cancer patient is no longer receiving medical treatment, which makes the matter of sufficient documentation an inherent problem in this field of research. An additional problem is that, according to O’Regan’s (1995) definition, a remission can be considered an SR if the disappearance of cancer occurred “without medical treatment, or with treatment that is *considered inadequate* to produce the resulting disappearance of disease symptoms or tumor” (O’Regan, 1995, p. 2, emphasis added).. The problem lies in the fact that it is often difficult to determine whether a treatment was indeed inadequate, or if in actuality the allopathic medical treatment simply had a delayed effect on the patient, in which case the treatment would have played a role in the remission.

A final challenge in the field of SR research is that no systematic research studies have yet been conducted to test the hypotheses that have been presented in the literature. This is primarily because it is difficult to find cancer patients who are willing to be in a control group

that receives no allopathic treatment. Some might also argue that SR is too rare of an event to merit designing a research study. However, others might respond that the potential ramifications of understanding SR – i.e., understanding what makes cancer go away – are so great as to make SR worthy of systematic research studies, even despite its rarity.

Next Steps

In summary, SR of cancer is a rare event that has been occurring for as long as cancer has been recognized as a disease. Despite its rarity, SR is worthy of study both because cancer is currently the second leading cause of death in the U.S. (Minino, Heron, Murphy, & Kochanek, 2007), and because SR research may potentially reveal ways in which the body can rid itself of cancer. Current causal hypotheses of SR suggest that a sudden immunological, hormonal, or psychological shift may elicit SR. However, there is an overall shortage of hypotheses and a notable lack of hypotheses that attempt to combine these three areas (i.e., that acknowledges the possible interaction between thoughts, hormones, and immune cells). In their review of all SR cases from 1900-1987, Challis & Stam (1990) found that “almost half of the authors failed to speculate or specify a possible cause for the spontaneous regression” (p. 545).

What is needed, therefore, is an investigation into *all* possible causes of SR – both physiological and psychological – so that the most promising theories can then be tested for causality in systematic research studies. Such a search for SR causal theories should also be broad. By definition, SR is a remission that occurs in the absence of allopathic medical treatment. However, although allopathic physicians cannot currently explain the cause(s) of SR, it is unlikely that these remission are truly “spontaneous”; most likely, SR has causal mechanisms that are as yet unknown to allopathic medical researchers. Therefore, a broad investigation into non-allopathic explanations for why SR may occur is warranted.

Finally, it is important to note that the vast majority of published SR case reports do not report on the cancer survivor’s opinion(s) regarding why the SR may have occurred. This represents a major source of untapped causal theories for SR, because the insights gained from personal experience may provide SR subjects with causal theories that are inaccessible to their physicians. Nevertheless, most of the published case reports reflect only the physician’s opinion(s), with the exception of a few psychologically-oriented investigators who purposefully sought out the opinions of persons who have experienced SR (e.g., Huebscher, 1992; Schilder, et al., 2004; Wagner, 1998). However, these psychologically oriented investigators were equally limited by their psychological lens, because they did not inquire into any physiological changes that may have contributed to their subjects’ SR’s. Therefore, a broad investigation of potential causal theories for SR, both physiological and psychological and offered by persons who have themselves experienced SR, is also warranted.

In summary, a study is needed that collects a wide range of possible causal theories for SR (both physiological and psychological), that purposefully seeks non-allopathic explanations for SR (because allopathic medicine has yet to explain it), and that collects causal theories from people who have actually experienced SR (because they may have experiential insights known only to them). Such a study would provide SR researchers with a strong foundation of causal theories that could then be systematically tested in future studies. The current study aimed to fill this research need.

Theoretical Background

This exploratory study is grounded in the theoretical framework of Salutogenesis. In addition, a small part of the current study investigates ‘Sense of Coherence,’ a psychological worldview that is associated with good physical health. Finally, the current study also takes into consideration recent developments in the field of Psycho-Neuro-Immunology that may explain how psychological perceptions and/or worldviews may impact one’s physical health. These three theoretical concepts are described below.

Salutogenesis

The current research project is grounded in the Salutogenesis approach. Literally meaning ‘health origin,’ Salutogenesis calls for research into what makes people well/healthy as opposed to what makes them not well/sick (Antonovsky, 1987; Lindstrom & Eriksson, 2005). Medical sociologist Aaron Antonovsky first used the term Salutogenesis in his book, *Health, Stress and Coping* (1979) and expanded the concept in his second book, *Unraveling The Mystery of Health - How People Manage Stress and Stay Well* (1987). Salutogenesis is based on Antonovsky’s (1987) fundamental assumption that humans are constantly moving along a spectrum between health/ease and illness/dis-ease. This assumption sits in opposition to the dichotomous, “Pathogenic” medical view, which sees persons as being either healthy or sick (Schwartz, 1979).

In addition to this first, fundamental assumption, Antonovsky (1987) outlines five additional aspects of the Salutogenic orientation, the second of which is that a person’s position on the health/dis-ease continuum is influenced by his/her *entire* life situation – including biological, social, and psychological factors, both current and historic. Again, this Salutogenic view contrasts with the Pathogenic view, which encourages non-overlapping medical specialties (e.g., cardiology, psychiatry) and looks only for biological causes of physical illnesses (Cassell, 1979).

The third aspect of the Salutogenic approach actively encourages the identification of ‘salutary factors’ that help a patient to recover from illness, as opposed to investigating only risk factors that make a person sicker. Furthermore, Salutogenesis argues that a salutary factor is not only the reduction of a risk factor, nor is it necessarily a temporary coping mechanism; rather, Salutogenesis contends that salutary factors can also be independent and permanent aspects of people’s lives (Antonovsky, 1987). For example, quitting smoking or temporarily seeing a therapist may represent salutary factors that help a lung cancer patient improve his/her health, but so may his/her permanent, non-anxious personality.

The fourth major aspect of Salutogenesis challenges the Pathogenic notion that all stressors are inherently negative, and instead argues that some ‘stressors’ can be neutral or even salutogenic for certain people (Selye, 1975). The Salutogenic approach therefore encourages research questions such as, “Why do *some* people do well (e.g., experience SR), even though they are faced with a significant stressor (e.g., a cancer diagnosis)?”

Fifth, the Salutogenic approach aims to describe and promote ongoing adaptation to the ever-present forces of disease and stress in our lives (Antonovsky, 1987). This adaptive view

opposes the Pathogenic approach, which seeks a single, ‘magic bullet’ treatment that ideally will return a person back to a permanent state of health, but which, in reality, may create new side effects, or may provide only a temporary solution (Dubos, 1959; Illich, 1975). This is an important distinction, because Salutogenesis encourages *any* treatment/change that will help a person move toward and stay at the healthy end of the health/dis-ease continuum, whether it is a pharmaceutical drug, marital therapy, a safer neighborhood, or cleaner drinking water. Therefore, the Salutogenesis approach can be applied to a wide range of subject areas, including but not limited to medicine, social welfare, psychology, public health, and public policy.

The sixth and final aspect of Salutogenesis is that it actively seeks out and hopes to learn from the ‘deviant case,’ such as the Type A person who does *not* get heart disease, the black person who does *not* have hypertension, or the metastatic cancer patient who does *not* die as predicted (Antonovsky, 1987).

Salutogenesis in this Study

The present research is grounded in all six aspects of the Salutogenic framework. First, the interview questions are designed to elicit causal theories about what makes cancer patients get well (i.e., move toward the healthy end of the health/dis-ease continuum) as opposed to what makes them get sicker. Second, the open-ended research questions ask about *any* aspect of the subject’s life that might have contributed to the remission, including biological, social, and/or psychological aspects. Third, the study actively seeks to identify salutary factors of persons who experienced SR, that is, permanent factors in their lives that may have helped them to recover from their cancer.

Fourth, the study’s open-ended questions allow respondents to describe cancer as a positive, neutral, and/or negative condition, without presuming that they necessarily consider it a negative event. Fifth, the purpose of this study is not to find a single, ‘magic bullet’ therapy that brings about SR; rather, the open-ended questions of this project allow subjects to describe the variety of ways in which they tried to move toward the healthy end of the health/dis-ease continuum. Finally, the current research project is directly tied to the sixth aspect of Salutogenesis, because it seeks to learn from the ‘deviant cases’ of persons who previously had cancer but did not die as predicted.

Sense of Coherence

While the current study utilizes Salutogenesis as its framework, it also investigates one of Antonovsky’s (1987) measures called the “Sense of Coherence” (SOC). Early in his research, Antonovsky set out to answer the Salutogenically-oriented question, ‘What makes us healthy?’ His results led him to this answer: a strong SOC (Antonovsky, 1987, 1993). In various studies that analyzed the coping mechanisms of people who were healthy despite having gone through extremely traumatic situations (e.g., the Holocaust), Antonovsky noticed that physically healthy people had a way of seeing the world that allowed them to thrive, both physically and emotionally, even while enduring stressful conditions (Antonovsky, 1993; Antonovsky, 1987). He called this way of seeing the world one’s SOC, which he described as being comprised of three major components: 1) Comprehensibility; 2) Manageability; and, 3) Meaningfulness. Formally, Antonovsky (1987) defined SOC as:

a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (p. 19)

In terms of the Comprehensibility component, a person with a strong SOC is able to make sense continually of his/her surroundings, and to find a way to order and explain new stressors when they arise. In terms of Manageability, someone with a strong SOC has a firm belief that he/she will somehow find a way to manage stressful events when they happen, and therefore does not often feel victimized by life. Finally, in terms of Meaningfulness, a person with a strong SOC believes that he/she will be able to find meaning even in life's hardest struggles.

Antonovsky (1987) considered Meaningfulness to be the most crucial of the three SOC components, because he believed it to be the component that motivates a person to act in the face of challenges. He saw Comprehensibility as the next most important component of SOC, because a person needs to comprehend a stressor before he/she can conceive of managing it, which is the third and final component. However, Antonovsky (1987) was quick to note that all *three* components are necessary for successful coping and for movement toward the healthy end of the health/dis-ease continuum.

Some critics have argued that SOC is merely a psychological state associated with a high socio-economic status (SES), and that the conditions associated with a high SES (and not SOC) are what lead to good health (Geyer, 1997; Ing & Reutter, 2003). However, recent studies have shown that SOC predicts health independently of one's SES (Bernabé et al., 2009; Lindmark, Stegmayr, Nilsson, Lindahl, & Johansson, 2005; Wainwright et al., 2007). In addition, some researchers have argued that a person's SOC may not be stable across the lifespan as Antonovsky (1987) had originally theorized; rather, multiple studies have found that SOC actually increases with age (Eriksson & Lindstrom, 2005; Holmberg, Thelin, & Stiernstrom, 2004; Nilsson, Holmgren, & Westman, 2000). In Eriksson and Lindstrom's (2005) systematic review, they concluded that one's SOC could remain relatively stable for as many as 10 years, although not as rigidly stable as Antonovsky had hypothesized. In addition, Volanen, Suominen, Lahelma, Koskenvuo, & Silventoinen (2007) found that negative life events (e.g., a cancer diagnosis) can significantly decrease one's SOC, regardless of how strong one's SOC was before the event. They also showed that the more recent the negative event, the lower the SOC (Volanen et al., 2007). In relation to the present study's topic of SR, the mixed results of studies on SOC's stability imply that longitudinal studies which test a subject's SOC at various points in time are necessary in order to unravel any possible relationship that SOC may have with cancer survival.

Finally, some critics have argued that SOC may overlap with similar concepts such as hardiness (Kravetz, Drory, & Florian, 1993), resilience (Geyer, 1997), and self-esteem (Baumeister, Heatherton, & Tice, 1993). However, one review (Almedom, 2005) concluded that SOC appears to be inclusive of hardiness and resilience, while another review (Ouellette &

DiPlacido, 2001) described SOC as the most distinctive of these similar psychological constructs. While further research is needed in order to understand the exact similarities and differences between these related concepts, two large-scale and systematic reviews found SOC to be a reliable, valid, and cross-culturally applicable measure that has predictive ability regarding physical health (Eriksson & Lindstrom, 2005, 2006).

‘Sense of Coherence’ and Health

A strong SOC is most well known for its association with physical health, regardless of culture, ethnicity, gender, or age; various studies have validated this association (see Hart, et al., 2006; Read, et al., 2005; Suominen, et al., 2001; Surtees, et al., 2003). Another study showed that a strong SOC buffers against the risks of chronic disease (Surtees, et al., 2003), while yet another study showed that a weak SOC is associated with more medical symptoms (Svartvik et al., 2002). Perhaps most impressively, Eriksson and Lindstrom’s (2006) systematic literature review, which specifically investigated the relationship between SOC and health, concluded that SOC is indeed a predictor of health. Furthermore, while Eriksson and Lindstrom (2006) do not comment on exactly how SOC is able to predict health (i.e., its mechanisms), they do conclude that SOC has a “main, moderating, or mediating role in the explanation of health” (p. 376).

Studies on SOC and cancer in particular have also revealed connections between a strong SOC and health. One study found that, across all types of cancers in an eight-year, longitudinal study of middle-aged, employed Finnish men (n=5,866), those with an initially weak SOC had a higher Relative Risk (RR) [1.52, 95% CI, 1.12-2.06] of being diagnosed with cancer compared to men with an initially strong SOC (Poppius, Virkkunenb, Hakamab, & Tenkanena, 2006). In that same study, having an initially strong SOC seemed to delay – but not necessarily prevent – a cancer diagnosis; this “delaying” effect was strongest for men who were 55 years of age and older at the beginning of the study (Poppius, et al., 2006). In a different study (n=320), Gotay, Isaacs, & Pagano (2004) found that cancer survivors had higher SOC levels than control populations. Perhaps most thought-provoking, however, were the results from Surtees et al.’s (2006) very large study (n=20,323), which showed that a strong SOC was more associated with lower cancer mortality, while a strong Sense of Mastery (SOM) was more associated with lower cardiovascular mortality. SOM is a related, yet different, theory regarding the extent to which a person believes he/she has control over life’s chances and events (see Pearlin & Schooler, 1978). Additional studies like Surtees et al.’s (2006) will have to be performed in order to understand the implications of this finding, although initial interpretation would seem to imply that a strong SOC somehow inhibits cancer specifically, while a strong SOM somehow inhibits cardiovascular disease specifically.

‘Sense of Coherence’ in this Study

Because of the association between a strong Sense of Coherence (SOC) and good physical health, the current research project assessed the SOC of persons who have experienced SR and hypothesized that, because of their current status of cancer-free health, their current SOC scores would be higher than population averages. SOC scores in this study were assessed using Antonovsky’s abbreviated, 13-question SOC scale (Antonovsky, 1993). In addition, during the semi-structured interviews with persons who have experienced SR, subjects were asked questions that gave them the opportunity to describe whether or not they experienced a significant change in their worldview (i.e., significant change in SOC) prior to experiencing

remission, a change which may thereby be associated with their significant increase in physical health. However, due to this study's retrospective and cross-sectional nature, it did not test for change in SOC over time; rather, it only tested the current SOC of persons who have experienced SR in the past. Future, longitudinal trials may wish to test whether a cancer patient's SOC changes from time of diagnosis, to time of treatment, to time of remission or hospice entry.

Mechanisms of 'Sense of Coherence'

Due to the strong association between a high SOC and good physical health, there has necessarily been some discussion among researchers about the mechanisms by which SOC may create good health. Furthermore, because the current study seeks to collect a wide variety of causal theories regarding how SR of cancer may occur, a brief discussion of SOC's potential mechanisms for creating good physical health is warranted.

Antonovsky (1987) saw two potential mechanisms or pathways by which a strong SOC may create good health. The most obvious mechanism is also the most indirect – that persons with a strong SOC are more likely to engage in healthier behaviors (e.g., exercising instead of binge drinking), which then leads to improved health. Various studies have since validated this mechanism. For example, studies have shown that a strong SOC is a significant negative predictor of alcohol problems (Midanik, Soghikian, Ransom, & Polen, 1992; Midanik & Zabkiewicz, 2009; Neuner et al., 2006), and is positively correlated with both regular exercise (Hassmen, Koivula, & Uutela, 2000; Read, et al., 2005) and less smoking (van Loon, Tihjuis, Surtees, & Ormel, 2001). These studies exemplify the ways in which a strong SOC may lead people to engage in healthier behaviors, which will then lead them to experience better health. In the current study, open-ended interview questions regarding subjects' coping behaviors from the time of diagnosis to remission allowed the researcher to assess the healthfulness (or not) of subjects' coping behaviors.

The second mechanism that Antonovsky proposed for how a strong SOC may lead to good physical health is that persons with a strong SOC experience less stress, which may lead them to have a stronger immune system. In agreement with stress researchers Lazarus (1966) and Selye (1956), Antonovsky (1987) posited that three steps occur when a stimulus appears in one's life. First, one decides if the stimulus is a stressor or not. Second, if it is deemed a stressor, one decides if that stressor is potentially harmful. Third and finally, if the stressor is deemed potentially harmful, action is taken and one's emotional response is also regulated (Antonovsky, 1987).

Throughout this entire three-step process, Antonovsky (1987) proposes that having a strong SOC allows a person to experience less stress. First, people with a strong SOC are less likely to define a stimulus as a stressor, because they will automatically assume that they can adapt to the stimulus. Second, when a person with a strong SOC *does* define a stimulus as a stressor, he/she is "more likely at [this] stage to define a stressor as benign or irrelevant" (Antonovsky, 1987, p. 133). Again, however, even persons with a strong SOC will define certain stressors as either endangering or positive, both of which require further action (note: Antonovsky emphasized that even positive stressors require action). A person with a strong SOC, though, is likely to appraise stressors as more positive and less endangering than someone with a weaker SOC.

At this point in the three-step process, the person with a strong SOC is more likely to “feel a sense of engagement, of commitment, of willingness to cope with the stressor” (Antonovsky, 1987, p. 139). In other words, the Meaningfulness aspect of the SOC comes into play at this moment and spurs the person into taking action. Next, the Comprehensibility component of a strong SOC occurs, because the person with a strong SOC confidently believes that the new problem can be ordered and understood. Finally, Manageability plays a role, as the person with a strong SOC is more willing to define problems as challenges instead of burdens, and is better able to find resources to address the challenge.

At this point, the person with a strong SOC takes action and regulates any emotions that may emerge as a result of taking action. After or sometimes while the problem is being assessed, emotions may emerge in response to the stimuli. According to Antonovsky (1987), these emotions must be regulated, because “the human organism cannot, without consequent damage, remain at a high and intense level of emotional tension, even if the emotion is pleasurable” (p. 149). He believed that persons with a strong SOC are more likely to experience emotions that are easily regulated compared to those with a weaker SOC. For example, the same stressor may arouse motivational emotions in a person with a strong SOC (e.g., sadness, fear), but may arouse paralyzing emotions in a person with a weaker SOC (e.g., depression, projection) (Antonovsky, 1987).

In summary, at all steps of the stressor appraisal/response process, the person with a strong SOC is likely to experience less stress than a person with a weaker SOC is. Experiencing less stress, however, only becomes a mechanism for good physical health when one considers that less stress may lead to a stronger immune system.

Psycho-Neuro-Immunology Mechanisms

Even in 1987, when Antonovsky published his second book on the Sense of Coherence, the fact that chronic and/or major stressors could depress one’s immune system had already been shown in research studies (Borysenko, 1984; Laudenslager, Ryan, Drugan, Hyson, & Maier, 1983). Since then, the field of Psycho-Neuro-Immunology (PNI) has come to conclude definitively that stress-related immune deregulation is a core mechanism behind diseases such as cardiovascular disease, Type 2 diabetes, and certain cancers (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002a). In broader terms, PNI researchers have categorically concluded that both psychosocial stressors and interventions to alleviate those stressors can directly depress or invigorate the immune system, thereby creating direct changes in one’s physical health (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002b).

There have even been some PNI studies conducted directly on SOC. For example, Lutgendorf, Vitaliano, Tripp-Reimer, Harvey, & Lubaroff (1999) showed that a strong SOC protects against the decrease of Natural Killer (NK) cells while one is enduring a stressor. McSherry & Holm (1994) similarly showed that a strong SOC lowered one’s physiological reactivity during stress, while yet another study found that a strong SOC protects against the negative effects that chronic stress has on glucose levels (Zhang, Vitaliano, Lutgendorf, Scanlan, & Savage, 2001). In terms of cancer, Post-White (1994) showed that cancer patients with a strong SOC experienced increased Natural Killer cell activity. PNI studies such as these are

useful in identifying the potential biological pathways by which a strong SOC may lead directly to good physical health.

As a primarily qualitative and non-biological study, the present study did not seek to investigate the exact biological mechanisms by which a strong SOC – or any psychological state, for that matter – may lead to good physical health. However, the PNI mechanisms described above did guide the researcher in designing open-ended interview questions which allow subjects to attribute their cancer remission to physical and/or psychological events or traits, such as a strong SOC.

Conclusion

In summary, Salutogenesis – that is, research into what makes people healthy as opposed to sick – served as the theoretical framework and foundation for this study. In addition, the SOC of those persons who have experienced SR was assessed in this study because of its strong association with good physical health. Finally, results from the field of Psycho-Neuro-Immunology guided the design of open-ended questions in this study so as to allow subjects to make connections between their cancer remission and physical and/or psychological factors. In the following section, the present study's methods will be discussed, followed by a report on this study's findings.

Methods

Design

In order to address the current challenges of SR research as discussed in the Literature Review above, this study was designed to address the following two research questions, using the Salutogenic framework as a guide:

1. What causative theories do alternative healers, physicians, and SR survivors propose for SR?
2. Do persons who have experienced SR have a strong ‘Sense of Coherence’?

In order to answer these two questions, the current study was designed as a retrospective, cross-sectional, mixed-methods study that included both qualitative interviews ($n_1=70$) with healers, physicians, and persons who have experienced SR, and also a quantitative, psychometric scale ($n_2=20$) for persons who have experienced SR. This design was purposely chosen because the research was exploratory and descriptive; therefore, the 70 qualitative interviews allowed for the development of causal theories for SR, while the 20 quantitative, psychometric scales completed by SR subjects described more fully this rare sub-population, especially in terms of Sense of Coherence.

The research methods in this study, namely semi-structured interviews, close-ended written questions, and a psychometric scale, were considered appropriate methods given the current lack of theories and knowledge regarding the cause(s) of SR. Therefore, the mixed-methods design was considered advantageous given the project’s three goals of: 1) theory generation; 2) population description; and, 3) Sense of Coherence exploration. It is hoped that the results from this exploratory study will provide guidance for future, systematic research studies of SR that will be able to test for causality. Limitations of this study design are described in the “Discussion” section below.

Sample & Study Sites

In Phase I of the present study, three physicians, one PhD researcher, and 46 alternative healers from the U.S. and from ten other countries ($n=50$) were interviewed, either in person or over the phone. The intention to interview mostly non-allopathic healers was purposeful. Because allopathic medicine has not yet been able to explain SR, and because SR is defined as a remission that is *not* caused by allopathic medicine, this study purposefully sought to collect non-allopathic, causal theories for SR. For the duration of this paper, the 50 Phase I subjects will be referred to collectively as ‘Healers,’ a broad label that is meant to include the 47 alternative healers, three physicians, and one PhD researcher who were interviewed. All in-person interviews took place at a location of the subject’s choosing, usually in his/her office or home. Any physician or healer who had treated cancer patients within the last ten years was considered eligible for an interview; however, interview preference was given to those physicians and healers who had had one of their patients experience SR. In addition, non-clinical academic researchers (e.g., PhD’s) were included as interviewees if they had conducted research on the topic of SR.

In addition to conducting in-person and over-the-phone domestic (U.S.) interviews, the Lead Investigator also conducted a 9.5-month research trip during which in-person interviews were conducted in the following countries: Hawaii (Kahuna healing tradition), China (Traditional Chinese Medicine), Japan (integrative oncology and Kampo healing tradition), New Zealand (Maori healing tradition), Thailand (herbal cleansing tradition), India (Ayurveda and Yoga healing traditions), England (Complementary Medicine), Zambia (African Traditional Medicine), Zimbabwe (African Traditional Medicine), and Brazil (Spiritualism healing tradition). Due to scheduling conflicts that prevented in-person interviews, one additional over-the-phone interview was conducted with a healer from Ireland, and one additional interview was conducted in an email exchange with a healer from New Zealand. The 11 countries represented in this study were purposefully chosen for their breadth and diversity of healing traditions. It is hoped that future studies on this topic will provide enough resources to be able to collect causal theories for SR from *all* of the world's regions, including the Middle East and Northern Asia. Table 1 below shows basic characteristics of the 50 Phase I subjects, including healing modality, country of healing practice, and gender. In the cases where a subject practiced two healing modalities, his/her primary healing modality is listed first.

In Phase II of this study, 20 adults who have experienced SR were interviewed. Any adult who claimed to have previously had cancer (of any type and stage) and to have subsequently experienced an SR as defined by O'Regan (1995) was considered eligible for an interview. Phase II interviews with SR subjects took place primarily over-the-phone, although they occasionally took place in person when resources allowed, at a location of the subject's choosing (usually in a café or in his/her home). Table 2 below reports basic characteristics of the 20 Phase II subjects, including type of SR, type of cancer, and gender.

The decision to conduct Phase I interviews in-person and to conduct Phase II interviews over-the-phone was purposeful. It was believed that face-to-face interviews during Phase II would not be significantly more beneficial than over-the-phone interviews, because gaining the trust of Phase II subjects was not expected to be as challenging as for Phase I subjects, due to the fact that Phase II subjects were expected to be eager to share their healing story. It was considered more important, therefore, to allocate the study's limited resources in such a way as to allow face-to-face Phase I interviews, because it was anticipated that Phase I Healers would be less open and trusting of a researcher who was inquiring into their healing methods.

Table 1
Characteristics of Phase I Subjects (Healers)

Healing Modality	n	%
Allopathic Physicians	3	6
Ayurvedic Medicine	1	2
Crystal healing	1	2
Energy healing	2	4
Energy healing & Herbal medicine	1	2
Family Constellation therapy	1	2
Fasting/Cleansing	2	4
Guided Imagery	2	4
Herbal medicine & Spiritualism	5	10
Holistic Psychology	3	6
Kahuna healing	3	6
Maori healing	2	4
Meditation & Yoga	5	10
Native American healing	1	2
Peruvian healing	1	2
PhD Researcher	1	2
Spiritual healing	3	6
Spiritualism	4	8
TCM (Traditional Chinese Medicine)	6	12
TCM - Moxibustion Specialty	1	2
TCM - Chigong Specialty	2	4
Total (N=50)	50	
Country of Healing Practice	n	%
Brazil	5	10
China	6	12
England	4	8
India	3	6
Ireland	1	2
Japan	5	10
New Zealand	4	8
Thailand	3	6
U.S. – not including Hawaii	7	14
U.S. – Hawaii	7	14
Zambia	4	8
Zimbabwe	1	2
Total (N=50)	50	
Gender	n	%
Male	32	64
Female	18	36
Total (N=50)	50	

Table 2
Characteristics of Phase II Subjects (SR Subjects)

Type of SR	n	%
No allopathic treatment ever	10	50
Allopathic treatment failed to remit the cancer	10	50
Total (N=20)	20	

Cancer Type	n	%
Adrenal	1	5
Breast, metastatic ^a	3	15
Breast and ovarian	1	5
Colon ^a	1	5
Gastric	1	5
Glioblastoma	2	10
Immunocytoma ^a	1	5
Renal cell ^a	1	5
Liver	1	5
Lung, non small-cell ^a	1	5
Lymphoma, Splenic Marginal Zone ^a	1	5
Lymphoma, Non-Hodgkin's MALT	1	5
Pancreatic ^a	1	5
Prostate	1	5
Prostate, metastatic ^a	1	5
Prostate and breast (male subject)	1	5
Uterine	1	5
Total (N=20)	20	

^aIndicates metastatic cancer, either to lymph nodes or to distant site(s).

Gender	n	%
Female	10	50
Male	10	50
Total (N=20)	20	

Seventeen out of 20 Phase II (SR) subjects completed the psychometric scale (response rate = 85%). Among those seventeen SR subjects, the mean age at diagnosis was 50 years old, while the mean time passed from diagnosis to SR was 2.3 years. The mean time passed from SR to the time of the interview was 7 years. Table 3 shows additional characteristics of the seventeen SR scale respondents, including distributions of age at diagnosis, ethnicity, socioeconomic status, and highest education level reached. Non-responses are listed only for the questions in which they occurred.

Table 3

Demographic Characteristics of Phase II (SR) Psychometric Scale Respondents

Age at Diagnosis	n	%
18-30 yrs	1	6
31-50 yrs	8	47
51-70 yrs	8	47
71-90 yrs	0	0
Total (N=17)	17	
Ethnicity	n	%
Caucasian	15	88
Japanese	1	6
No response	1	6
Total (N=17)	17	
Socio-economic status ^a	n	%
\$0-\$30,000/yr	3	18
\$30-\$60,000/yr	1	6
\$60-\$90,000/yr	5	29
\$90-\$120,000/yr	2	12
\$120-\$150,000/yr	1	6
\$150,000+/yr	1	6
No response	4	24
Total (N=17)	17	
Highest education level reached	n	%
High school/G.E.D.	2	12
Associate's degree	1	6
Bachelor's degree	3	18
Master's degree	7	41
Professional degree	3	18
No response	1	6
Total (N=17)	17	

^aMeasured by annual income.

In addition to both the sample of Healers ($n_1=50$) and the sample of persons who have experienced SR ($n_2=20$) which were recruited for this study, SOC data from previously published studies was also used. The first of these cross-sectional studies measured the SOC of the Canadian general population ($n=17,626$) (Wolff & Ratner, 1999); the second study measured the SOC of U.S. residential care facility employees ($n=728$) (Mackie, Holahan, & Gottlieb, 2001); the third study measured the SOC of U.S. rheumatoid arthritis patients ($n=828$) (Callahan & Pincus, 1995), and the fourth study measured the SOC of a sample of healthy women in the U.S. ($n=89$) (Motzer, Hertig, Jarrett, & Heitkemper, 2003).

Finally, a fifth cross-sectional study measured the SOC of two groups of Hawaiian cancer survivors – one group of “exceptional” cancer survivors ($n_1=160$), and one group of standard

cancer survivors ($n_2=160$) (Gotay, Isaacs, & Pagano, 2004). In the study, “exceptional” cancer survivors were defined as “patients who had survived for at least five years post-diagnosis, but [who], for their given site and stage [at diagnosis], had less than a 25% actuarial probability of living for five or more years” (Gotay et al., 2004, p. 883). 251 Hawaiian cancer survivors in the Hawaiian Tumor Registry (HTR) met this “exceptional survivor” criterion at the time of the study, and 160 of those people agreed to complete the SOC-13 scale, along with other psychometric scales (Gotay et al., 2004). In addition, 160 control subjects were then recruited to match the “exceptional” group based on gender, time since diagnosis, ethnicity, and cancer type; however, the control subjects had all been diagnosed at an earlier stage of disease (Gotay et al., 2004).

It is important to note that Gotay et al.’s (2004) “exceptional” cancer survivors are *not* necessarily SR subjects, because they all received some form of allopathic treatment. They *may* be SR subjects if it could be shown that the allopathic treatment they received failed to remit their disease, perhaps leading them to pursue alternative forms of cancer treatment. However, the Hawaiian Tumor Registry (HTR) from which the study (Gotay et al., 2004) obtained its data does not contain enough information to determine whether or not these “exceptional” survivors achieved remission because of allopathic treatment, alternative treatment, or both. However, because these “exceptional” cancer survivors greatly exceeded their allopathic prognoses, they are still considered an important comparison group for the SR subjects in the present study.

Sampling Strategy

Purposive, snowballing sampling techniques were employed to identify the 50 healers who have treated cancer patients (Phase I) and the 20 SR subjects (Phase II). Although snowballing techniques do not allow one to collect a random sample (which is only necessary in quantitative research), such techniques are extremely appropriate for qualitative research (Crabtree & Miller, 1999). Snowballing was especially appropriate for this study given that there is no national registry of SR cases, thereby making SR subjects difficult to identify. In addition, the researcher was not able to use the National Cancer Registry to identify potential SR subjects, because the registry does not distinguish between remissions that are the result of allopathic treatment and remissions that are the result of non-allopathic treatment (i.e., SR).

Recruitment was ongoing until 50 healers and 20 SR subjects were interviewed. In qualitative research, Crabtree & Miller (1999) posit that sample sizes as small as ten are sufficient to conduct content analysis. In the present study, the sample size for Phase II ($n=20$) was predicted to be smaller than Phase I’s sample size ($n=50$) due to SR’s rarity; however, because each phase’s sample size was still greater than 10, both phases had sufficient sample sizes to conduct meaningful content analysis, according to Crabtree & Miller’s (1999) criterion. More importantly, Crabtree & Miller (1999) recommend that one’s sample size in qualitative research should be as large as is necessary to achieve data saturation; in the present study, data saturation occurred by the sixteenth Phase II subject (out of 20).

Regarding the quantitative aspect of this study, the Phase II sample size of 20 was considered sufficiently large enough to conduct *descriptive* analysis only of the quantitative data that was collected from the psychometric SOC scale. The sample size of 20 was too small, however, to conduct any statistical analyses or statistical comparisons. In addition, a sample size

less than 40 is usually considered to have an unstable mean (Moore & McCabe, 2002), which indicates that the mean from this study's 17 SOC scale respondents (see "Findings" section) is most likely unstable, and should therefore be interpreted with caution.

Recruitment & Retention

To begin recruitment for Phase I, the Lead Investigator initially sent out approximately 50 'Introductory Emails' (see Appendix A) to relevant Healers whom the Lead Investigator had either read about in books/articles/websites, or had been referred to by colleagues. The Lead Investigator attempted to locate current contact information for these potential subjects by using publicly available sources. If an email address for the potential subject was ascertained, the researcher emailed the introductory letter (see Appendix A) to the potential subject. If no response was received after 10 days, a second email was sent. If no response was received 10 days after the second email, the researcher made one phone call (if the phone number was publicly available) in a final attempt to recruit the potential subject.

In addition, the Lead Investigator also sent out a general inquiry email to all colleagues, family, friends, and to any relevant professional organizations requesting Healer interviewee recommendations. The Lead Investigator also used networking techniques in order to build relationships with contacts who may have had connections with potential Phase I subjects (e.g., the head social worker at a Comprehensive Cancer Center). After receiving permission to contact a potential subject directly, the Lead Investigator emailed the introductory letter (see Appendix A) or made an introductory telephone call to the subject in order to describe the study and potentially schedule an interview. All leads were followed up on, usually via email but sometimes via phone, until 50 healers had been interviewed. An additional source of Phase I subjects came from the Lead Investigator asking Healer subjects after each interview if they had any recommendations for more potential Healer subjects.

To begin recruitment for Phase II (SR) subjects, the Lead Investigator first emailed the "Introductory Email for Potential Phase II Subjects" (see Appendix A) to any potential SR subjects whom she had personally read about. This step led to two of the 20 SR interviews. In addition, all healers interviewed were asked for potential SR referrals; this step led to four of the 20 SR interviews. Next, the Lead Investigator followed up with participants from a public lecture on SR that was given by the Lead Investigator prior to beginning this research; this step led to one of the 20 SR interviews. Next, the Lead Investigator sent out an email to colleagues, relevant health/cancer organizations, and authors who write about cancer in order to ask for referrals to potential Phase II subjects. This step led to 11 of the 20 SR interviews. A personal acquaintance referred one more SR interviewee, and the final SR interview resulted from a cancer patient who found this study's website via Google, contacted the Lead Investigator on his own accord, and then referred an SR subject that he knew personally.

In terms of response rates for the hour-long interviews, there was a 63% response rate for all potential Phase I subjects that were contacted, and an 80% response rate for all potential Phase II subjects that were contacted. In terms of retention, Phase I subjects (healers) were only contacted once (i.e., during the interview); therefore, retention was not an issue. For Phase II subjects, all efforts were made to provide both the quantitative SOC scale and the series of close-ended questions (see Appendix B) as immediately as possible after the interview, in order to

improve the response rate of the scale. Nevertheless, three out of the 20 Phase II subjects did not complete the quantitative scale, resulting in an 85% response rate.

Measures

The semi-structured interviews, set of close-ended questions, and psychometric scale used in the present study were purposefully designed to explore the following variables, which were chosen due to their frequent presence in the SR literature:

- Physiological Events (all immediately prior to the SR):
 - Virus/infection/fever
 - Blood transfusion
 - Significant blood loss (or blood blockage to the tumor)
 - Biopsy/surgery
 - Hormonal change (i.e., pregnancy, thyroid removal, etc.)
 - Self-vaccination treatment
 - Dietary change
 - Other physiological change

- Psychosocial Aspects (historically and immediately prior to the SR)
 - Emotions/thought patterns
 - Coping mechanisms, including ‘Sense of Coherence’
 - Living conditions / Daily life
 - Major life events / Stressors
 - Religious and spiritual beliefs
 - Social support

- Demographics
 - Type of cancer
 - Stage of cancer (at diagnosis and at time of SR)
 - History of metastases, if any
 - Passage of time from diagnosis to SR
 - Gender
 - Date of birth
 - Age (at diagnosis and at time of SR)
 - Ethnicity
 - Socioeconomic status
 - Education level

The 13-question ‘Sense of Coherence’ questionnaire (SOC-13) (Antonovsky, 1987) was used to assess the SOC of Phase II subjects (see Appendix B, p. 4). Total possible SOC-13 scores range from 13-91, with higher scores indicating higher SOC. The SOC-13 scale has shown high levels of internal consistency, with Cronbach alpha values ranging from 0.70 to 0.92 across 127 studies, and test-retest reliability of 0.64 over a three-year period (Eriksson & Lindstrom, 2005). Eriksson & Lindstrom (2005), who reviewed 458 scientific publications on SOC, also report that the face validity of the SOC scale is “acceptable,” the consensual validity is “moderate,” and the criterion validity with respect to health ranges from “slight to good” (e.g.,

other health instruments explain at most 66% of the variance in SOC). Their review of construct validity indicates that SOC is “multi-dimensional rather than uni-dimensional,” while a small number of longitudinal studies seem to indicate that SOC has high predictive validity for health (Eriksson & Lindstrom, 2005).

Regarding hypotheses that were tested in this study, no specific hypotheses were tested during the interview phase; rather, the goal was to collect a wide variety of causal theories for SR. However, with regards to the SOC scale, it was hypothesized that persons who have experienced SR would have a strong Sense of Coherence as compared to general populations, on the basis of previous findings which have shown that a high SOC is associated with good physical health (Hart, et al., 2006; Read, et al., 2005; Suominen, et al., 2001; Surtees, et al., 2003).

Procedures

The Lead Investigator conducted all in-person or over-the-phone, hour-long, audiotaped (and sometimes videotaped) interviews with 50 healers and 20 SR subjects. Written field notes were taken during and after most interviews. In addition, Participant Observation sometimes occurred before, during, or after certain Phase I interviews, when it was believed that participation in the healing technique being described by the healer would help the Lead Investigator to understand it more fully. Translators were used as needed for Phase I subjects; however, due to resource constraints, only English-speaking Phase II subjects were recruited. In-person interviews were conducted at a location of the participant’s choosing, usually his/her office, a café, or his/her home.

Interview Guides for both Phase I and Phase II subjects (see Appendix C) were designed based on both Arthur Kleinman’s recommended questions for cross-cultural illness explanation (Kleinman, Eisenberg, & Good, 1978) and on this study’s goal of collecting causal theories for SR. Immediately following each of the 20 Phase II (SR subject) interviews, the researcher gave each Phase II subject a series of close-ended questions to answer (see Appendix B), which included the Sense of Coherence scale (see Appendix B, p. 4). These close-ended questions and scale were purposefully given to the SR subjects *after* the interview, as opposed to before, so that the close-ended questions would not bias the subjects’ responses during the open-ended interview.

Finally, in order to reduce the possibility of an initial misdiagnosis, Phase II subjects were given the option of allowing the Lead Investigator to verify the subject’s original cancer diagnosis with the subject’s oncologist; however, such verification was not required in order for persons to be interviewed. Written permission to verify an SR subject’s diagnosis with his/her diagnosing oncologist was granted by 10 of the 20 SR subjects. Verification was achieved either by viewing the subject’s medical records or by receiving a verbal confirmation from a staff member at the oncologist’s office who had access to such information. Of the 10 subjects who granted permission, eight were confirmed as having been initially diagnosed with a malignancy. The remaining two subjects were unable to be confirmed because their oncologist did not respond to the Lead Investigator’s emails/phone messages. It is deemed unlikely that the subjects who were not verified were being deliberately dishonest about their diagnosis, because the vast majority of Phase II subjects gave the Lead Investigator permission to use their real

names in any reports associated with this study. Instead, the poor response rate (50%) for this optional verification step was most likely due to the fact that this step was overly emphasized as being optional. In addition, subjects may have been wary of a stranger (i.e., the Lead Investigator) calling their physician to ask questions about their medical records. Therefore, in future studies, it is recommended that ample explanation be provided as to why diagnosis verification is important in SR research (i.e., in order to rule out the possibility of misdiagnosis).

Data collection and analysis took approximately two years to complete, from May 2008 to May 2010. The first year was dedicated primarily to arranging and conducting Phase I Healer interviews in the U.S. and abroad, while the second year was dedicated primarily to interviewing Phase II subjects and analyzing the data.

Analytic Strategy

In order to analyze the 70 qualitative interviews, all audio recordings were first transcribed. A Grounded Hermeneutic analytic approach was then used to analyze both the transcripts, any written notes taken by the Lead Investigator, and the fill-in-the-blank answers from the Phase II series of close-ended questions (see Appendix B). This type of analysis began immediately after the first interview and continued throughout the entire data collection process, thereby allowing any emerging themes to be integrated into subsequent interview questions (Crabtree & Miller, 1999). In this study, the researcher began with ‘open coding,’ a process by which the data are examined for themes, similarities, and differences (Lincoln & Guba, 1985). Open coding led to the development of an initial list of codes, or themes. Next, axial coding was performed, a process by which the data and codes are analyzed a second time in order to identify any additional subcategories that emerge and which can provide more specific information (Lincoln & Guba, 1985). In addition, outside documents, such as Phase I subjects’ publications, Phase II subjects’ blogs, or articles on the topic of SR, were referenced during the analysis process to confirm existing codes and elicit new ones.

In order to improve reliability, an independent reviewer identified emerging themes in ten randomly selected transcripts (five healers, five SR subjects). The Lead Investigator’s codes were not shared with the reviewer beforehand, and the reviewer’s codes were later compared to the Lead Investigator’s list of codes. Any novel codes found by the Independent Reviewer were incorporated into the analytic process as new codes, while any similar codes found by the Independent Reviewer were matched to one of the Lead Investigator’s initial codes. Rounds of axial and selective coding continued until no new themes or subcategories emerged, a point also known as ‘data saturation’ (Lincoln & Guba, 1985).

Three categories of codes emerged from the qualitative data: 1) Treatments for cancer; 2) Causes of cancer; and, 3) Underlying beliefs. In addition, the ‘Treatments for cancer’ and ‘Causes of cancer’ codes were further categorized as being either a) physical; b) mental/emotional; c) energetic; or, d) spiritual. A code was categorized as a ‘Treatment for cancer’ if it referenced an activity – either physical, mental/emotional, energetic, or spiritual – that was purported to help remit cancer. In contrast, a code was categorized as an ‘Underlying Belief’ if it referred to a belief that motivated or guided a participant’s choice of treatment(s). At the conclusion of each interview, all participants were asked what they believed might cause cancer; therefore, codes related to the cause(s) of cancer necessarily emerged. However, because

this study's research questions centered on what might bring about Spontaneous Remission, only the 'Treatment for cancer' and 'Underlying Belief' codes will be discussed in this dissertation; the 'Cause of cancer' codes will be discussed in a separate paper.

Finally, the data that resulted from the quantitative SOC scale that was given to the 20 SR subjects were first analyzed separately and then compared to the findings from the qualitative interviews. SOC scores were analyzed using Microsoft Excel software to determine the group's mean, median, standard deviation, and variance. The mean SOC of this study's SR group was then compared cautiously with SOC means from other relevant populations. However, due to the extremely small sample size of scale respondents (n=17), and to the potential sample bias of those SR subjects who volunteered to be interviewed versus those who did not, statistically significant comparison of SOC means (e.g., two independent groups t-test) was not possible.

Reliability & Validity

Kirk & Miller (1986) define reliability in qualitative research as "the degree to which the finding is independent of accidental circumstances of the research" (p. 20). Validity, a concept used in quantitative research to ensure that the data collected are objectively accurate, is harder to apply to qualitative research because qualitative researchers do not assume that there is one objective/accurate reality; rather, qualitative researchers assume that different people have different worldviews, and that such disparate beliefs lead to a diverse range of human behavior and experience (Crabtree & Miller, 1999). Acknowledging, therefore, the inherent difficulty in applying the quantitative concept of validity to qualitative research, Crabtree & Miller (1999) suggest that qualitative researchers can enhance the validity of their data by 1) providing an in-depth description of the data as well as the analysis process; 2) by reflectively evaluating one's biases in the interpretation of data; 3) by conducting all research with academic honesty; and, 4) by remaining open to alternate explanations.

Therefore, the following steps were taken to improve the reliability and validity of this study's findings: 1) leaving an audit trail to enhance reproducibility; 2) using a relatively large sample size (for the qualitative portion of the study) to improve reliability; 3) using multiple sources of data (interview transcripts, field memos, participant-observation notes, close-ended question results, psychometric scale results, academic literature) to allow for triangulation; 4) analyzing negative cases to improve the accuracy of the codes; 5) using peers/advisors to debrief regularly in order to decrease bias; 6) giving Phase II subjects the option of having their cancer diagnosis verified; and, 7) having an independent reviewer code ten randomly selected transcripts.

Ethical Issues

This study received approval from the Committee for the Protection of Human Subjects at the University of California at Berkeley (Protocol #2008-4-81), and all required informed consent and confidentiality procedures were followed. The need for documented informed consent was waived; therefore, a verbal informed consent script was read aloud to each subject by the Lead Investigator and verbal consent was received before beginning each interview. Signed 'Media Release' forms were obtained before taking photographs or filming subjects. In accordance with the "Health Insurance Portability and Accountability Act (HIPAA)" guidelines, signed release forms were also obtained for those Phase II subjects who volunteered to

participate in the optional ‘Diagnosis Verification’ step. At the beginning of their participation in this study, each subject was given a unique and randomly generated Participant ID#. Any identifying information was kept confidential, secure, and separate from all transcripts, photos, audio recordings, and videos. All types of data collected were stored on either a password-protected computer or in a locked file cabinet in a locked room.

As a precaution, after each Phase II interview, all SR subjects were provided (via email) a list of toll-free hotlines for psychosocial support related to terminal illnesses, in case any negative emotions were aroused as a result of the interview. Only one SR subject reported back to the Lead Investigator that she had experienced strong emotions after the interview; this subject further reported that she was able to process those feelings with her therapist, and that she was grateful for the interview because it had allowed her to bring some final closure to her cancer journey. While it is not known whether any of the other 19 Phase II subjects experienced strong emotions after the interview, the vast majority emailed the Lead Investigator to say that the interview had been a very positive experience.

Also, in order to protect potentially vulnerable Phase I and Phase II subjects, persons who were not cognitively able or psychologically stable enough to participate in the interview, as determined by the coherence of their response(s) to recruitment, were excluded from the study out of respect for their autonomy and safety. However, no subjects were deemed to be cognitively or psychologically unable to participate, and therefore no subjects were excluded for this reason. In addition, only adults were interviewed (18 years or older), and subjects with disabilities were accommodated. Because no compensation was given to subjects, coercion was not considered to be a factor for those subjects who may have been economically disadvantaged.

Conclusion

The methods chosen for this study, namely semi-structured interviews, participant observation, close-ended questions, and a psychometric scale, were considered appropriate given both the rarity of the topic and the stated goals of this study, namely to collect a wide range of causal theories for SR and to describe more fully the rare sub-population of persons who have experienced SR. The next section reports on the findings from this study, while the following section will offer a discussion of those findings.

Findings

This study's first research question – ‘What causative theories do physicians, alternative healers, and SR survivors propose for SR?’ – sought to collect a wide range of causal theories for SR. This first question was answered by the qualitative findings from this study, namely the analysis of the 50 Healer interview transcripts, the 20 SR interview transcripts, and the 17 sets of responses from the series of close-ended questions given to SR subjects (see Appendix B, pp. 1-3). This study's second research question – ‘Do persons who have experienced SR have a strong ‘Sense of Coherence’ (SOC)?’ – sought to investigate one particular causal hypothesis for SR, namely that a high SOC may be associated with SR. This second question was answered by the quantitative findings from this study, namely the 17 responses to the SOC-13 scale (see Appendix B, p. 4). In this section, the qualitative findings will be described first, followed by the quantitative findings.

Qualitative Findings

As described in the previous ‘Methods’ section under ‘Analytic Strategy,’ three categories of codes emerged from the qualitative data: 1) Treatments for cancer; 2) Causes of cancer; and, 3) Underlying beliefs. Because this study's first research question sought to understand what causes SR, and not what causes cancer, the ‘Causes of cancer’ codes will not be discussed in this paper, but rather in a separate paper. In this section, the ‘Underlying Beliefs’ that emerged regarding health and illness will be described first, in order to provide grounding and context for the ‘Treatments for cancer’ that also emerged, which will be described second.

Underlying beliefs.

The following three ‘Underlying Beliefs’ emerged from the qualitative data analysis:

1. Change the underlying conditions which allow cancer to thrive
2. Illness=Blockage/Slowness; Health=No Blockages/Movement
3. A body-mind-spirit interaction exists

Change the underlying conditions.

The first underlying belief, “Change the underlying conditions which allow cancer to thrive,” was coded whenever a participant described his/her belief that cancer cells only thrive under very specific conditions, and that in order to bring about a remission, it is necessary to change those underlying conditions. These participants believed that if such a change were to be made, the currently existing cancer cells would naturally die off and be removed from the body by its waste removal systems. This first underlying belief sits in contrast to allopathic medicine's view of cancer, which sees cancer cells as objects that need to be killed or removed directly by using surgery, chemotherapy, and/or radiation. In addition, the first underlying belief from this study potentially addresses the problem of cancer recurrence in that, if the underlying conditions under which cancer cells thrive were permanently removed, then the cancerous cells would be unable to grow again (i.e., recur). Healer #11 from China succinctly describes this first underlying belief as follows:

I think cancer is an end stage of a bad life. So what's needed from them [cancer patients] is clearly a kind of change. It [cancer] is just a symptom.

SR Subject #9, who eventually made major dietary and lifestyle changes which she believes

remitted her recurrent breast cancer, says the following about changing the conditions that promote cancer:

I think there are lots of things that cause cancer, but I think you've got to stop the things that promote it, you know, that make it go. If you look at what Professor Campbell said – he's a professor at Princeton University – he regards cancer as something that's forming all the time, but you have to have something that promotes it.

Healer #22 from India speaks about how cancer is simply a signal that a particular change needs to be made in a person's life:

First look at yourself, know yourself and see what is the imbalance, what is the reason [for the cancer], because if you don't find the reason, it's like you are trying everything and maybe one thing can help, but maybe hundreds of them will not. So, she [Healer #22's teacher] says that the reason can be on the physical, or it can be on the mental, and the only person who really can cure it is you...But the point is when the illness is there, it is may be the illness who is going to show to you what is the way to go in another direction or consciousness to lead your life, to move your life.

Healer #27, an oncologist from Japan, has a very specific theory about how certain human behaviors such as poor diet, stress, non-expression of emotions, toxin inhalation, etc. can create sub-optimal conditions in the body (e.g., poor blood circulation and low body temperature). He further believes that such sub-optimal conditions eventually decrease the number of mitochondria in cells, which then forces cells to reproduce in a cancer-like manner. Therefore, his short-term treatments focus on re-establishing mitochondria in the cell (e.g., via heat therapy), while his long-term treatments focus on changing the sub-optimal behaviors that led to the mitochondrial decrease in the first place. In this way, he believes that cancerous cells can actually be *rehabilitated* back into healthy cells, if the sub-optimal conditions are changed:

HEALER #27: Cancer substance is not made by cancer cells, but by human beings. And the cancer substance to change is not cancer cell, but human beings. And the bad circulation and low temperature – never cancer cell create such a condition. Human being itself create bad circumstances.

INTERVIEWER: So it's the bad circumstances that human beings create in their body that allow the cancer cells to grow?

HEALER #27: Yes. So, my understanding is cancer cell is not malignant cell, but sacrificed/delinquent cell...adapted to the wrong circumstances...In our body, cancer cell never arise up in a heart or small intestine, because these heart and small intestine are warm and high blood and high content of oxygen. Small intestine and heart is good circumstance, so small percentage [of cancer] -- very unusual for cancer [to appear in those organs]...But my idea is when mitochondria become decreased/shrunked, then normal cell become cancerous. This is how *all* cancer appears...For example, sperm has one mitochondria. But highly differentiated cell has many mitochondria, for example, liver cell has 2,000 mitochondria. So, if a normal cell decreased in number of mitochondria, ...then apoptosis [normal cell death] become difficult. That is the first step of the cancer cell, of carcinogenesis.

In a similar theory, SR Subject #14 believes in cutting off the food supply of cancer cells, thereby changing the condition under which they are thriving:

If you can create conditions in the body where cancer is just gonna really struggle to survive, that is definitely the better approach...and that's why Patrick [an author] and Nutrition 2000 make a big deal of the sugar, because, you know, these cancers are anaerobic, so they need the nitrogen, and the gluten is a nitrogen shuttle, which feeds them. And if you can just cut off that shuttle supply, of course the cancer is not going to make it, you know.

This first underlying belief, “Change the conditions which allow cancer to thrive,” also had two sub-beliefs that emerged:

1. Change the conditions which allow cancer to thrive
 - a. Each patient may have a unique change that he/she needs to make
 - b. Cancer indicates an unbalanced condition; the goal is to re-balance

The first sub-belief was the notion that each patient may have a unique change that he/she needs to make in order to change the conditions which are allowing his/her cancer to thrive. Healer #32 from New Zealand explains this sub-belief as follows:

Everyone is different. One size fits all healing does not fit all. Plants may work for one type of person, and completely fail on someone else. Conventional medicine may work for one and not work on someone else.

Similarly, Healer #20 from Hawaii describes how the treatment he recommends to one cancer patient may be contraindicated for another cancer patient:

I believe the answer to any type of healing has to do with energy level first, and then there are going to be some extraneous factors that are specific to that individual – their psychology, their past, history, and their future...On a physical level, we mentioned and you mentioned diet. We propose a certain kind of diet. It's anti-inflammatory, specific to that person, because one person's anti-inflammatory could inflame another person.

Finally, Healer #21, also from Hawaii, describes some of the unique changes that various cancer patients have made to help remit their particular cancer:

In my own experience with and observation of people with cancer, I have noted that the most successful recoveries seem to be strongly associated with major mental, emotional, or physical behavioral changes among the people with the illness. What is major for one person, of course, may not be the same for another. Some people get results from radically changing their whole lifestyle, while others get results from forgiving a longtime resentment. I know of one success where a woman left her family, took up a different religion, changed her clothing and diet, and moved to a different country. Maybe she needed all of those changes and maybe not, but overall it worked for her. I know of another person, a man, who simply stopped trying to outdo his father, and that worked for him.

The second sub-belief that emerged under the larger belief, “Change the conditions which allow cancer to thrive,” was the notion that cancer, or any illness, represents a condition of imbalance somewhere in the system of a human being; therefore, the way to eradicate cancer is

to rebalance that condition. For example, Healer #8 from China describes this sub-belief as follows:

TRANSLATOR: So, he [Healer #8] first mentioned about the immune system. So in TCM [Traditional Chinese Medicine], for the cancer area, the key thing is the yin-yang, the balance. And from attaining this balance, you can actually bring up your immune response. So, after you can improve your immune system, then your own body can now have a better surveillance system, so your immune system can actually fight off those abnormal cells, when they're not like this tumor yet. The key thing for Chinese medicine is that in cancer, it seems like you sort of branched out from the norm. So, for TCM, it can bring it back to more balance.

Similarly, Healer #36 from Thailand explains his belief about attaining balance in order to achieve health:

In the human, it [health] is manifested through physical health, but that's only part of it because there are approximately five spokes in the wheel of health – and only one is physical. You need a spiritual direction, you need sound emotional functioning – we have people that have a strong spiritual direction, great physical health, great environment, but they're still emotionally dysfunctional. You know? And there's all of these aspects to health, and what you need is balance.

Illness = blockage/slowness, health = no blockage/movement.

The second underlying belief that emerged from the qualitative data was called, “Illness = Blockage/Slowness; Health = No Blockage/Movement.” This code was applied whenever a participant described his/her overall belief that illness forms when some part of the human system is blocked or moving slowly, as compared to a healthy state of non-blockage or movement. This second underlying belief relates to the first underlying belief in the sense that the ‘Conditions which allow cancer to thrive’ may be blocked or slowed conditions. As an example, Healer #1 from Brazil describes his belief that energetic blockages lie at the root of all illness:

FIELD NOTES: Healer #1 then described his theory of “bypasses,” which he described as psychological defense mechanisms which function to create a bypass around an energetic block. Healer #1 said that this energetic block can be located at either the spiritual, mental, emotional, or physical level. He went on to say that these bypasses become solidified over time, so true healing only occurs when a person 1) stops bypassing, and 2) releases the original blockage.

Similarly, Healer #49 from the U.S. describes her theory on how blockages form:

Every word and emotion travels on the immune system and gets stored within the cells. And when we have behavior that is continuous and we experience the same emotions over and over again, they reach a point where they create a density. The energy is no longer able to flow through there and we get a disease that we label, such as “cancer.”

In a similar manner, Healer #21 from Hawaii defines health and illness in terms of movement and tension, respectively:

Health is active movement and so the contrast, which is important to understand what that means – the contrast is illness and the generic term for illness is *ma'i*... So this means a state of great tension. So we come to the very basic concept that governs all the healing systems in Hawaii, even the *lomi*, and that is in order to heal you must relieve stress and stimulate the movement of life, which could be circulation and energy. So health is when we are in a state of either active movement or potential movement with no restrictions to that. Illness or any degree of that is the degree of tension or stress that you have in your body. So you relieve the stress, and healing begins automatically because that is a natural function of the body, to heal itself, and the only thing in the way is too much stress, which can come from a number of different sources.

Finally, SR Subject #19 describes illness or ‘dis-ease’ as stuck energy:

I think the etheric body – the energy body – organizes the physical body based on thoughts or emotions that are either flowing or blocked. So as long as emotions and thoughts are positive and flowing, constantly moving the way that energy is supposed to go, then the physical body is holding a state of greater balance. As soon as the thoughts become low frequency thoughts, or our emotions become low frequency emotions, then the energy tends to jam up or get blocked in the auric field. And when it blocks up enough, it first creates discomfort...when nothing is done to release those emotions or thoughts or to change them, then the way that the Universe or God or Creator or whatever you call it, the way that it can best get your attention is to move those patterns, that stuck energy, closer and closer into the physical body so eventually it moves into the etheric field and sometimes even into the physical body, and that’s what causes what I call ‘dis-ease.’ And again, it’s still just energy that’s stuck.

A body-mind-spirit interaction exists.

The third underlying belief that emerged from the qualitative data was, “A body-mind-spirit interaction exists.” This code was applied whenever a participant mentioned the belief that a change in the body, mind, and/or spirit aspect of a human being could lead to a change in one or both of the other aspects. This third underlying belief relates to the first underlying belief from this study in the sense that the “Conditions under which cancer thrive” may lie at either the physical, mental/emotional, or spiritual level. Also, this third underlying belief implies that, regardless of whether the conditions that need to be changed lay on the physical, emotional, or spiritual level, making a change in *any* of the levels could cause a change to occur in the other two levels, because of their interconnected nature. Finally, this third underlying belief relates to the second underlying belief in the sense that a blockage (or area of slowed movement) can occur at either the physical, mental/emotional, and/or spiritual level. As an example of this third underlying belief, Healer #23 from India describes her view of the body, mind, and spirit interaction as follows:

What we say about Ayurvedic system of medicine is we have a very different philosophy about the health. We are not talking only about the physical health. We are talking about the mind, the spirit, and body – all these things...so that’s why we are not talking about only the physical health. So, we are discovering the mind, spirit, and body also and how it can be maintained....While I’m examining a person, I’m seeing what kind of body constitution this person has and what kind of mental constitution this person has. Because, you know, body and mind both are interrelated, both are connected.

Similarly, Healer #35, an American who was trained in a Peruvian healing tradition, explains her theory on the body-mind-spirit connection:

To be complete in our culture as it is now, you have to have mind, body, spirit healing. A normal person in our world has to understand that there is that connection that creates whatever we are. You see, in the Andes, the belief pattern is that we co-create who we wish to become...Most of us who live in our physical bodies, we don't even know about spiritual or emotional bodies. So we have to connect with all three of them, but see, in the mountains of the Andes, they [the Andean people] are already connected.

Finally, Healer #26, a physician from Japan, describes his theory on the body-mind-spirit interaction:

FIELD NOTES: Healer #26 believes that the spirit and mind are essential factors in determining physical health. He gave the analogy of a river whose source is the spirit, followed by the mind/thoughts, followed by the food and water and air that we put into our bodies, and followed last by our bodies. While he believes that the food/water/air that we put into our bodies (and the bacteria or toxins that may be in them) can often be the cause of bodily problems, he also believes that the quality of one's spirit and mind/thoughts can either cause entirely or exacerbate bodily problems. Since he views the spirit as the source of this 'river,' he believes that any *complete* healing will necessarily address all four aspects of health: spiritual, mental/emotional, food/water/air intake, and the physical body.

This third underlying belief (that a body-mind-spirit interaction exists) also contained three, additional sub-beliefs which emerged from the qualitative data:

3. A body-mind-spirit interaction exists
 - a. Thoughts/emotions affect the physical body
 - b. Energy is in everything (e.g., in the body, mind, and spirit)
 - c. Spirit may be the primary aspect of our being; mind and body follow it

The first sub-belief was by far the most frequent of the three sub-beliefs to emerge, and it was coded whenever a participant discussed the notion that a person's thoughts and/or emotions¹ have a direct, causal effect on the state of one's physical body, either positively or negatively. "Negative" thoughts and/or emotions were always discussed as having an illness-producing effect on the body, while "positive" thoughts and/or emotions were always discussed as having a health-producing effect on the body. The kinds of thoughts and emotions that were described as having a negative, or illness-contributing effect on the body included: fear/worry/anxiety, anger/resentment, grief/sadness, and depression/no will to live. The types of thoughts and emotions that were described as having a healing effect on the body included: non-worry/calmness/relaxation, forgiveness, happiness/love/joy, and a strong will to live/purpose for

¹ There has been considerable debate in the field of Psychology as to the difference between thoughts and emotions, as well as to the sequence of these (e.g., whether thoughts/beliefs precede emotions or vice versa). Because this was a grounded qualitative study, the Lead Investigator took cues from the participants themselves, who usually lumped these two concepts together. Therefore, in order to reflect the subjects' opinions as they were stated in their original form, thoughts and emotions are treated as one entity in this paper, not two.

living. For example, Healer #27, an oncologist from Japan, explains his theory on how the inability to express emotions can lead to illness, including cancer:

HEALER #27: Western medicine is unknown cause of cancer [i.e., does not know the cause of cancer], but our system is clear of the three factors of the cancer cause. Cancer is the rear end [final consequence] of alexithymia – losing the sensation of the expression of feelings/emotions. Most of the cancer patients first, before suffering from cancer, they are suffering from this alexithymia. Alexithymia causes blood pressure [to go] down, and lowering of temperature, because emotion is not being expressed...For example, atherosclerosis, hypertension, diabetes, high blood pressure, and cancer – all of them same issue – all come from alexithymia, the weak expression of emotion. But the worst people of the alexithymia suffer from cancer.

INTERVIEWER: So, do you think alexithymia is the cause of cancer?

HEALER #27: The *main* cause.

INTERVIEWER: And is this alexithymia causing the mitochondria to decrease? [earlier in the interview Healer #27 had theorized that a decrease in mitochondria causes cells to become cancerous]

HEALER #27: It [alexithymia] is causing lowering blood pressure and lowering temperature – and low temperature destroy[s] the function of the mitochondria.

In a similar vein, Healer #14 from the U.K. describes his belief of how one's thoughts and emotions directly affect the cells in one's body, either positively or negatively depending on the particular belief/emotion:

Quite a lot of medicine is still based on an old paradigm which is rapidly becoming out of date, a paradigm that says the material dimension is primary, and mind and that sort of thing is secondary. ...There's actually another paradigm that's emerged from theoretical physics and now in biology...where beliefs are seen as primary and the material world as secondary.... It's not the genetics but the *environment* in which the cell sits that dictates its behavior. And that environment is absolutely, intimately related to the mind of the person running the body, you know. So that if you're highly stressed, that's going to speak to those cells in a very specific way. If you're positive and you're happy, that's going to speak to those cells in another way. The environment in which those cells live is going to be transformed according to how you're feeling. This is very powerful.

Healer #22 from India describes a similar process by which, in her opinion, certain thought patterns can lead to negative physical changes in the body:

HEALER #22: When you start to see the emotion or the mind is when we start to discriminate that we have emotions, that we have mind, that create our way of living. The person who is for example thinking, "I am according to what I have." And if we don't have enough, we start to feel like we are lacking something... "My friends have a car or have a house," and, ... "If my friend is very successful and I am not very successful, then I'm behind." ...And then we start to think about it, and that lacking starts to move our emotions, and these emotions create some pressures, and those pressures start also to create some physical illness, some imbalance in the hormones, in the nervous system, and this is not because our body is infected or gets a virus or something; it's because it's coming from lacking from our mind.

INTERVIEWER: What are some of the negative thoughts or mind patterns that could lead to an illness?

HEALER #22: For example, another pattern could be, “I am not good enough,” or, “Nobody loves me,” or, “I am always wrong.”

SR Subject #4 also embraces this notion of one’s thoughts having a causal impact on one’s physical body:

Being diagnosed with cancer set me off on this spiritual journey in which I eventually came to realize I have control over everything that happens in my life. And it’s basically through your attitudes and your thoughts. So that if you focus on the negative, you’ll attract negative to you. If you focus on the positive, you’ll attract positive to you. Like, we create everything. That, you know, nothing – there is no real solid stuff. It’s all energy that’s, that’s vibrating into a solid. But, and you know, it’s your thoughts that create everything. So, yeah, we’re – we’re God’s reality show.

SR Subject #20 took the notion of one’s thoughts impacting one’s physical health to a very specific level:

I wanted to heal and I now know that...you can’t say, “I *want* to heal.” You have to say, “I’m healed.” ‘Cause if you think that you’re *healing*, you’ll always be healing. Or if you *want* to heal, it means you’re not healing. You know, so you have to really think of yourself as “healed.”...I became aware of my self-talk and adjusted it when I’d hear myself say, “I want to heal,” when I really should have said, “I’m healthy.”

Finally, SR Subject #6 explains his theory on how thoughts lead to changes in the physical body:

I believe that there is a higher area – or a pre-area – of energy, before it becomes manifested in the physical. In psychology we refer much of it to the “true self” or the “higher self” or various other names. But that is kind of the model on which the mental manifests itself in the physical body. So, my understanding is that it’s the mind and that the mind is able to modify, reconfigure, or have an effect on the physical body and that’s basically what this [healing work] is. That’s the way of the mind modifying the physical world.

The second sub-belief to emerge under the larger belief, “A body-mind-spirit interaction exists,” was the sub-belief that all three of these aspects of a human being are made up of the same ‘energy,’ which is vibrating at different speeds, and which explains why a body is palpable, while thoughts/emotions and the spirit are not. This sub-belief provides a theoretical base for any treatments that involve “energy,” such as acupuncture, Reiki, etc., because it explains how a treatment that involves only “energy” could cause a physical change in the body. For example, Healer #18 from Hawaii utilizes the energy that he believes is always around and inside of us to conduct his healing work, as is described in the following description:

FIELD NOTES: After attending the public healing session, I [the Lead Investigator] introduced myself and my study and he [Healer #18] offered to do an energetic healing on me. He asked me to sit down. He stood three feet away from me and said, “Are you ready?” Then he snapped his fingers. I had seen him do this with volunteers during the 2-hour public healing session, but I was still skeptical that I would feel anything. Therefore, I was quite surprised to instantly feel what I can only describe as a force-field of expansive energy emerge around my forehead, extending about five feet in diameter. I

instantly felt light-headed, as well as deeply meditative. He asked me to stand up and walk a few steps. I noticed that I felt much lighter in my body, as if I weren't as physically heavy. The 'force-field' diminished after about one minute...The next morning when I spoke to him, he said, "What did you think about last night? What do you make of it?" I answered, "Well, to be completely honest, I've been thinking a lot about last night and I think that you've somehow figured out how to access the energy of Oneness/Godness that you say connects us all, and that you can tap into it at any time and send it to other people." He said, "That's exactly right."

Similarly, Healer #26, a physician from Japan, believes that everything in this world is made up of energy that is vibrating at varying levels:

FIELD NOTES: Healer #26's philosophy about health is inspired by quantum physics and string theory, and he believes that everything in the universe – including sounds, cells, and thoughts – is energy that is vibrating at the quantum level. Therefore, he also uses 'Cymatics' on his patients, a small machine developed in England that can be programmed to emit a certain vibration that will purportedly 'retune' any unhealthy tissue or organ back to its normal, healthy vibratory frequency. According to his theory, each organ/tissue has its own, unique frequency at which it alone should vibrate. For example, small intestine cells would vibrate at a certain frequency, while lung cells would vibrate at a different frequency.

Healer #12 from England believes that there is an ever-present field of energy that healers can tap into and transmit from in order to perform healing work:

FIELD NOTES: Healer #12 believes in a field of energy/higher consciousness that is ever-present and all-powerful, but is not located in the body; rather, he believes that the brain transmits to/from this field...He himself had energy healing done on his heart and the scans before and after did show an improvement (i.e., the EKG improved). His explanation is that energy healers know how to connect to this field of higher consciousness/energy, and how to transmit it to the patient. So, healers are not creating something new from within themselves that they then give to the patient; rather, they are simply transmitting or allowing this energy to flow from the field, through them, to the patient. According to this belief, healers have learned to access this field of higher energy and have also learned to use their minds/bodies as a conduit that can transmit this higher energy over to their patients.

Finally, SR Subject #12 believes that the basic element of life is energy:

We are energy first, and as you get closer to matter, to gravity, we get denser and we end up with this physical-ness. But you take away that gravity, you would not be so dense. Nothing holds your molecules and atoms together other than gravity. Quanta of packets of energy, like a magnet. Without those things, you would float apart. So we really are – we're just energy.

The third and final sub-belief that emerged under the larger belief, "A body-mind-spirit interaction exists," was the sub-belief held by some subjects that the spirit may be the primary aspect of a human being, while the mind and body follow. In other words, although these subjects believe that the relationship between the body, mind, and spirit is indeed interactive in the sense that changing one aspect may impact the other two to some extent, they fundamentally

believe that all energy originates in the spirit. In other words, they believe that all energy begins at the spiritual level, then flows through the emotional and thought pathways, and finally flows into the physical pathways and takes shape in the body. In this schema, a blockage *first* occurs on the highest spirit/soul level; if it is not addressed/unblocked, it will create a blockage on the emotional level. If it is still not addressed, it will eventually create a blockage on the physical level, and manifest as illness. Therefore, these participants believe that removing the blockage at the spiritual level is the most important step in healing, as doing so will automatically remove the blockage at the emotional/mental and physical levels. For example, Healer #11 from China explains his hierarchical view of spirit, mind, and body:

TRANSLATOR: He [Healer #11] is talking about the three levels. But the majority, or the main focus, is actually on the third level, which is a spiritual healing.

HEALER #11: First level is spirit, second level is energy, and third level is body. Most doctors only focus on body...(switches to speaking in Japanese)...

TRANSLATOR: ...So therefore, in his mind, in order to more appropriately study TCM [Traditional Chinese Medicine], the first thing is our mindset – the way of how we interpret or realize things.

HEALER #11: But then we explain that the symptom of the body is just the result.

INTERVIEWER: So the symptoms of the body level are the result of the disconnection at the spiritual level. Is that right?

HEALER #11: Yes, disconnected inside. Inside affect the outside. They are the same.

Similarly, Healer #34, a New Zealander trained in Chi Gong, describes her belief in the primacy of the soul over the body:

Chi Gong is definitely a really useful tool to improve your health, but what he [Healer #34's Chi Gong Master] always emphasizes is the importance of working with your mind throughout your whole life. They say a person is made up of your physical body and your shen – which is your consciousness or spirit – and then chi is the thing that connects the shen and your physical body. So those three will work together and are one, really, but the key thing to remember is that the shen leads the chi, so your consciousness, or where the mind is going, is where your chi is going, and that begets your physical body. So if your shen is really busy and very emotional, you know going up and down, that really depletes your chi, and that leads to disease or breakdown. So it's very much about working on your mind...It's such a foreign concept in the west, the idea of chi. It's just a way of changing quickly and seeing us as more than just physical and individual; it makes you realize that your body is connected energetically with the whole universe, and that our thoughts can influence your inside, your own body, and outside as well. It's so powerful.

Finally, Healer #15 from the U.K. explains her theory on the soul's relationship to the body:

And I would say that the ills of the world and the ills of the body or the ills of a personal individual have happened because of this amnesia, this forgetfulness of identity. And when I come back to the identity itself – the soul – then I'm in charge of this vehicle [the body], this chariot, which is very precious, that I'm then able to use it well, I'm able to make good use of it, I'm able to take care of it well, I'm able to be the master. ...And so coming back to the awareness of the self, the soul, is absolutely critical at this moment in history. And when I know who I am, I use this vehicle in the right way and when I

forget, then the eyes, the ears, the physical senses take over and there are accidents. I see things and I interpret them in the wrong way. I hear things and I allow it to pollute my mind. I say things and I wish I hadn't. So it's like, you know, when the driver loses consciousness, then there's going to be an accident. But if the driver is aware and in charge, then the vehicle carries you to the destination.

Subjects who believed in this third sub-belief – that is, the primacy of the spirit over the mind and body – also gave vivid descriptions of energy at the spiritual level, and how connecting to such energy could lead to healing. For example, Healer #41 from the U.S. describes the energy at the spiritual level in this way:

[To heal], you put yourself in connection with the healing force of the universe. In spiritual terms it is called 'love'; in the ancient world, in the East, it was called 'chi.' And in the west it was called Zoe. Universal healing forces. Connecting yourself with yourself and you are becoming a – actually you're remembering who you are. So there's a natural impulse toward healing. We have a natural tropism toward balance, toward healing, toward coming into wholeness. It's built into our system. If it can be elicited and triggered, it'll happen.

Similarly, Healer #3 from Brazil explains how healing often involves connecting people to the spiritual energy of love:

What happens here is that the spiritual energy is so strong, because that's really what's doing the healing, and I tend to look at it as the vibration of love or the spiritual energy of love. You can call it God or you can call it love coming through the entities or you can say because people are in this energy field of love their own hearts begin to open more and then everything starts to come back into alignment again. But whatever it is, there's a lot of spiritual healing that goes on just on the level of people connecting with something inside themselves that's always been there that they either didn't know about or they got distracted from or they closed it down for different reasons or whatever. And it's really beautiful to see that spiritual opening or reawakening happening in people.

Healer #15 from the U.K. describes how spiritual energy is the primary aspect of human beings:

It [healing from a physical illness, like cancer] is a process of healing the soul, first and foremost, because all the negativity that I carry, the bitterness or the hatred or the wounds of pain and the lack of forgiveness – God's love is the power of healing first and foremost for the soul. But then it's also healing for the body itself, not just as an indirect result of the healing of the soul, but also very directly...The primary advice given to persons with a physical illness, therefore, is to practice meditation and to be mindful of every thought and action. These practices help to connect the person back to the divine energy source, which is the primary aspect of their being.

Finally, SR Subject #4 came to believe during the course of his recovery from cancer that he is made of spiritual energy:

I now believe that God created us in God's image. God created us and the universe out of the "stuff" or energy of God's self... Some may say that I am out of my mind. I would have to agree. I believe my mind has kept me blind to the presence of God all around and within me. Cancer has ignited a spiritual transformation in me. As I said previously, I

saw life as an experience to endure. I saw the glass as half empty. I now see life as an experience to experience and my cup runneth over. I am learning to let go of the past and appreciate the experiences that have brought me to the present moment. I no longer feel separate from God. I see God wherever I look. I see God in the face of each and every one of you. I see God in the mirror.

This third sub-belief – which posits that the spirit is the primary aspect of a human being – also explains why some participants believed that using physical treatments only would not cure a disease permanently *if* the initial blockage, or cause, of the cancer lay at the emotional or spiritual level. In this belief system, if one were to unblock only the physical blockage(s), the emotional and spiritual levels would still be blocked; therefore, it would only be a matter of time before those blockages trickled down once again to the physical level, manifesting as another illness (e.g., cancer recurrence). For example, Healer #35 from the U.S. talks about the relationship between cancer recurrence and taking responsibility for one's cancer:

We have to take responsibility for what we do. If we hit somebody in a car, we have to take responsibility for that. If we create cancer in our body, we have to take responsibility for that. If we don't do that, you're not going to cure. You might go into remission a little bit, but it's going to come back worse.

Similarly, Healer #13 from the U.K. discusses the relationship between cancer recurrence and slipping back into old habits:

And the ones who, if they have gone into remission and then a year down the track it reappears, it's because they've gone back to their old habits. They made all the changes while they needed to heal, but afterwards they started the same old thing again and think it will return. That's what I've seen.

Finally, SR Subject #13 explains how not addressing the emotional roots of an illness can lead to a recurrence of that illness:

I had a friend of mine who had lymphoma and she went into the same [energy] treatments [as me] and she got healed as well. But she had absolutely no understanding of why she had lymphoma. And four or five years later she had a recurrence of a different kind of cancer. And at that time she talked with me and I was able to get her to look at some of the emotional context of her current life, and to see how she was in situations that were bringing up those old patterns. And she did change the situation, and she seems fine right now.

Finally, some participants who believed in this third sub-belief – that is, the primacy of the spirit over the mind and body – went so far as to say that a physical illness is never caused solely by something physical (e.g., a toxin), but rather always caused at its root by a blockage at the spiritual level. In other words, participants who held this particular viewpoint believed that the physical body can quickly and easily remove large amounts of toxins, bacteria, viruses, etc. *as long as* there are no spiritual or emotional blockages whatsoever. Their theory is as follows: if the spiritual and emotional levels are unblocked, then a person could put almost any amount of toxins into his/her physical body and, because energy is flowing unhindered from the spiritual level to the emotional level to the physical level, then that energy will quickly and easily carry

the toxins out of the physical body, so as not to accumulate or cause damage/illness. For example, Healer #17 from Hawaii explains her theory on the body's ability to process toxins:

FIELD NOTES: She [Healer # 17] talked about how different emotions are processed through different organs. For example, she said that anger is processed by the liver and grief/sadness is processed by the lungs. She has met people who smoke a pack of cigarettes a day and their bodies and lungs can process out those toxins, but only because those people have *absolutely no* lingering grief or sadness. In fact, they are some of the happiest people she's ever met.

Similarly, Healer #49 from the U.S. explains her theory about the relationship between belief and toxins:

INTERVIEWER: What do you think the role of viruses and bacteria or toxins, such as hormones in the food – what role do they play in cancer, if any?

HEALER #49: I think that they play a secondary role and my belief is this: If your body is in balance, you could walk through a nuclear wasteland and not be affected. And I think it really comes down to belief. I fly over 100,000 miles a year...and people say, "Aren't you afraid? There's so much bacteria and viruses everywhere you go." And it's like, why would I have that belief? I've never gotten sick from all of my flying or going into another country and drinking their water, because I don't have that belief system. And even to the deepest core of me I don't have that belief. And so, therefore, I'm not affected.

The three major underlying beliefs described above, along with their sub-beliefs, guided both Healer and SR subjects in making decisions about which treatments to pursue to remit cancer. The following section describes the treatments that were discussed most frequently among the subjects in this study.

Frequent treatments among healers and SR subjects.

Of the more than 75 'Treatments for Cancer' that emerged in this study, six 'Treatment' codes were among the top ten most frequently mentioned treatments for both the Healer and the SR groups. These six 'Treatment' codes are as follows²:

- Treatment: Spiritual: Achieving a Transcendent State or a Deepening of Spirituality
- Treatment: Mental/Emotional: Trusting in Intuition
- Treatment: Mental/Emotional: Releasing Negative and/or Repressed Emotions
- Treatment: Mental/Emotional: Feeling Love/Joy/Happiness
- Treatment: Physical: Diet Change
- Treatment: Physical: Herbs or Vitamins

In addition to these six treatments, which were frequent among both groups of subjects, there were also treatments that were primarily frequent among Healers, and others that were primarily

² Note: These six codes are listed in the order suggested by a sub-theme that was discussed in the 'Underlying Beliefs' section, such that spiritual treatments are listed first, mental/emotional treatments are listed second, and physical treatments are listed last. However, this order was chosen for organizational purposes only; it is important to note that all six treatments were equally frequent among both groups of participants.

frequent among SR subjects. Such treatments will be discussed after the six treatments that were common to both groups of subjects are discussed.

Achieving a transcendent state, or a deepening of spirituality.

The first code, “Treatment: Spiritual: Achieving a transcendent state, or a deepening of spirituality” was applied whenever a subject described achieving a transcendent state, or deepening his/her connection with a higher spiritual force/energy in order to help remit cancer. Both healers and SR subjects discussed this code frequently. For example, Healer #41 from the U.S. describes the deepened spiritual state that he teaches his patients to reach in order to bring about a remission:

We would define it [Spontaneous Remission] more in terms of a spiritual connection...and in our system you're an active participant. So you are connecting yourself to these forces that exist and are made possible for you to use for yourself...I've been doing this for 34 years and I mentioned that many of my students...people come with cancer — with that 'diagnosis' — or many other kinds of ailments, and then they go back and are viewed and are examined again and it [the cancer] is gone.

Healer #24 from India describes the relationship between spiritual connection and physical healing to his patients in this way:

This box [the human body] is made for the divine, so divine is living inside of everyone. ... and if you think that now you are suffering with something [an illness], at least now become aware of that [divinity inside of you] and awaken that divinity, involve that divinity, and tell to that divine force, divine being, divine light, divine consciousness, to help you, to protect you, to save you, to cure you, and *involve* the divinity – grow your faith in the divine in you. This is not *your* home, this is not *your* box. This box belongs to the divine, this light belongs to the divine. This is divine's home. What we call 'My life,' it is not *your* something. It is the divine's home. And you with your ignorance [did] not take care of this home, and now this home is in danger [i.e., illness has occurred], so at least now tell to the owner of the home, “Please, teach me. I am not able to keep you good with me, but please come out, help me. Guide me and make your home best, make your home good.”

Similarly, Healer #15 from the U.K. describes the way that it feels when a person connects to spiritual energy and directs it toward physical healing:

Where you're in deep communion, in deep conversation, or even in deep silence, but just in the presence of the divine, that's meditation. And so when the soul is focused on God and there's that union, communion, you see, this is what yoga is. 'Yoga' means 'union,' connecting the self with the Supreme. So in that state of union what happens is you're drawing that light, that light, that energy, not just into the soul but *from* the soul and the rays extend out into the body also. It's like the warmth of the sun. You can feel that energy, not just on a superficial level on your skin but you can feel your body absorbing that warmth and that energy within itself in the same way as a soul takes that light and might through God's love, through prayer, through meditation. It actually is a process of healing. It actually helps the body heal.

SR Subject #4 was surprised to have the following transcendent experience during meditation while he was healing from cancer. He believes that this experience, combined with the overall deepening of his spiritual beliefs, was the primary reason for his healing:

It was a 10-day silent retreat where you couldn't speak, you couldn't acknowledge other people in the room and you just meditated for like 14 hours a day. And I had this experience that I can't explain. It was just like all of a sudden there was a flash and in my eyes I could see rivers of energy swirling around and at the same time felt that same thing through every cell of my body, and there's a word for it, but I forget what the teacher said it was, but he explained that, "You felt your soul. You felt your true essence." And I said, "Did I feel God?" And he kind of smiled and said that some people may call it that.

SR Subject #3 describes a similar transcendent experience that occurred near the beginning of his cancer recovery period, an experience which he believes played a large role in his physical healing:

And so I kind of open my eyes and I look over and I see that it's not really the bathroom light. There's something in there moving, and there's someone in there, and then there was a woman walking out of there and she was just shrouded in light and I couldn't see her face exactly but she was beautiful and – just this beautiful, beautiful light, and I can't describe the color, but it was like the perfect light. She was walking slowly over to me and she didn't say anything, but she held out her hand. And then she was right beside me, and she reached out her hand, and she put it on my head, and in that instant, I just, from my head down, slowly, it [the light] trickled like it was paint oozing down my body, inside and out, like every – every nerve in my body, every part, piece of my body could feel it and it just flooded me and I just kind of laid there with my eyes closed. I closed my eyes, and just let it take me over and it was just this feeling of — I think it was the feeling of, of, of perfection, of pure, pure love, of unaltered charity, of bliss, of ecstasy, of every— I mean, of perfection. And it flooded me for several seconds, and I held onto it.

Finally, SR Subject #7 describes how her spirituality deepened after her cancer diagnosis, and how that deepening helped her through her cancer recovery:

I was a spiritual, somewhat religious person before this [cancer diagnosis], but I really decided to open up a dialogue with God. And I really looked at it as I wouldn't have gotten cancer unless I was supposed to see something or help in this world in a way that I would *never* be able to do if I wasn't put in that situation. And so instead of ever saying, "Why me?" I actually always said, "Okay, I'm listening. What am I supposed to learn here?" or, "What am I supposed to teach here? How is my cancer journey supposed to help make the world better?" What impact am I supposed to have in that chemo chair, that I would *never* know about, if I hadn't, you know, gotten chemo, if I hadn't gotten cancer? And, so, that was really a powerful, liberating way to start this cancer journey. Instead of shutting down and – most people get very angry at God or they get paralyzed, they go into a state of depression. I actually kept looking for signs and clues of what I was supposed to be doing in this space, in this medical world and this cancer space. And so I really started to talk to God as if God were a doctor or a family member, a support system.

It is important to note that none of the subjects interviewed in this study described their spiritual beliefs or spiritual experiences as having had a negative effect on their cancer recovery.

However, some subjects did mention having had negative or neutral religious/spiritual experiences in the past. Nevertheless, such negative or neutral experiences were usually only brought up in order to contrast the positive spiritual experiences that they had had during their cancer recovery. For example, SR Subject #16 explains:

During that time [when I had cancer], I had a number of other things happen in my life that changed me from being a – I don't know even know if I would've called myself a marginal Christian because, to me, church was nothing more than, you know, you go once a week and do this ceremony, this ritual, and that's the extent of faith...So it took a lot of convincing to change my thinking on that and it started with the illness.

Trusting in intuition.

The second treatment code that emerged frequently among both the SR and Healer subjects was entitled, "Treatment: Mental/Emotional: Trusting in Intuition." This code was applied in three scenarios: 1) whenever a subject discussed listening to his/her own intuition or personal instinct regarding choice of treatment; 2) whenever a subject discussed listening to a healer or friend's intuition regarding the subject's choice of treatment; or, 3) whenever a subject referred to the notion that the human body knows intuitively and instinctively how to rebalance and heal itself, if given the right conditions. For example, Healer #17, an energy healer from Hawaii, describes her theory on how the body instinctively knows how to heal itself:

FIELD NOTES: She [Healer #17] said that "speed healing" [e.g., SR] can occur because the body wants to be whole, and knows how to be whole. However, sometimes it needs to be reconnected to its innate knowledge. The body can heal very instantly; it's the belief system (e.g., of fear) that makes us think that it takes a long time to heal. But using energy medicine bypasses that belief system, because it taps into the client's deeper, innate wisdom of the body.

Healer #31, a crystal healer from New Zealand, uses both her own intuition and her patients' intuition in order to choose their specific healing treatment:

I used to choose them [the crystals] for the client...One day, a client said, "Is there anything that you've chosen, or could you give me something specifically for the lungs?" Because she said she had a problem with the lungs. Yeah, I knew one of them was for lungs. So after she left, I went through the whole list of crystals that I'd chosen and three-quarters were for the lungs – intuitively! – and that's when I really began to trust my intuition. But then I found that the *client* knows what [crystals] they need.

Healer #48, a traditional healer from Africa, uses the intuition she receives from her dreams in order to prescribe the correct herbs to her patients:

TRANSLATOR: So she [Healer #48] is saying if she gets a patient, the patient comes here for the treatment, the patient will be allowed to sleep here overnight, and then she [Healer #48] is going to sleep, and then at night the spirits can come to her in a dream and tell her that for this person, the problem is this and this. Go ahead and take this and this [herb] and then treat that patient. So it comes at night as a dream.

SR Subject #7 describes the high level of intuition exhibited by a Tibetan healer the first time she met him, and how his intuition regarding her health correctly matched her own:

He [the Tibetan healer] felt my pulse. And he scrunched his face up very confused. And then he laughed. And I laughed back. And then he scrunched up his face again, and he looked at me, and through the interpreter he said, “You are *very* well.” I had stage 4 cancer that no one can get a handle on, and he’s telling me I’m very well! And I looked him in the eye, and I said, “I know.” And he said, “You are very, very well.” And I said, “I know!” And then he took his finger and, with a pinpoint accuracy, he touched every spot on my body where I had had cancer, or where I had cancer presently. It was amazing. He could see what scans couldn’t see. I had predicted my cancer four times. I had led them [the allopathic physicians] to it with a pinpoint of accuracy before the scans even could pick up the collection of cells. He [the healer] could do what I could do with my own body.

Similarly, SR Subject #19 from the U.S. describes the important role that her intuition played in determining her treatment plan:

So at that diagnosis appointment I was sitting on the table or whatever you call it – the bed – and I – are you ready for this one? I heard a little voice in my head. I never heard voices before. I heard a voice that said, “Not that way, not this time.”...He [the physician] became very frustrated, told me that the diagnosis was very serious and that I needed to follow his exact rules and guidelines in order to get myself better. If not, I did not have a good prognosis. Nonetheless, I told him that I was not going to do that and I don’t know why. I just knew that that voice meant something.

Finally, SR Subject #5 from Germany describes the first of many serendipitous coincidences that occurred after he began to trust fully in his intuition regarding his medical treatment:

I knew I had to rely on something that’s new to me, you know? Not new but, but something I have. It wasn’t new. I mean, we have things that we know. We have things we know, even if we don’t know where it comes from...And, then I happened to – I mean, once you make the decision – once you jump into trust – things just happen, you know? And just two days later after the process [of jumping into trust], I happened to meet Rubens Farias, the Brazilian healer...a friend of mine found him.

Releasing negative and/or repressed emotions.

The third code that was frequent among both SR and Healer subjects was entitled, “Treatment: Mental: Releasing negative and/or repressed emotions.” This code was applied whenever a subject discussed letting go of a negative emotion in order to contribute to the physical healing process. Examples of such emotional shifts included: letting go of fear/anxiety (especially regarding death), letting go of anger/resentment and moving into forgiveness (note: such forgiveness could be directed towards oneself or toward others), letting go of grief, letting go of guilt, letting go of feeling like a victim, or letting go of egotistic needs (e.g., the need for attention, such as the attention brought about by one’s cancer diagnosis). Letting go of fear, especially the fear of death, was by far the most frequent emotional state to emerge for this code. For example, Healer #42 from the U.S. describes the emotional release of fear that is associated with many of the Spontaneous Remissions he has observed:

We’re mostly seeing Spontaneous Remission when you can release somebody from that fear. And we find almost to a, without exception, anyway, in terms of just this small

place here – I don't deal with large numbers [of cancer patients] – that the people who experience Spontaneous Remission and those that have been the most successful in long term remission, even if they've been called back for treatment, are those that have the best way of dealing with uncertainty. Uncertainty seems to be a very key aspect. People that can stay in the present and not project fear into the future. So, if you can deal with uncertainty about the cancer by staying in the present, that seems to be the ticket. From a remission standpoint, it seems to then cause the body to relax, the body relaxes, gets more oxygen, more oxygen means the cell has a better chance. And then you'll fall in line. ... You see, it [fear] damages the kidneys, and as soon as you start to feel that 'there is no future,' then that's pretty much going to be it.

Similarly, Healer #3 from Brazil emphasizes the importance of releasing negative emotions and negative thought patterns from one's past:

I would also say from my own experience that between what goes on here [at the healing center], what the entities are doing, and then just in my own healing practice and healing in general, it seems to me that about 90 to 99% of the healing that's going on is actually cleansing or clearing away what doesn't belong anymore. Because most people carry around so much excess baggage, you know. I mean, we're lugging around our past and we're continually reexamining it, or not examining it, but we're still holding it in our muscles and in ourselves and in our organs and all of that. And so a lot of what seems to be needed is a lot of letting go, just letting go of layer after layer of stuff that's accumulated, whether it's patterns of thinking, or patterns of belief, or patterns of emotional reaction, or lack of reaction, or patterns of ignoring our emotions, of ignoring our intuition.

Healer #49 from the U.S. discusses the importance of letting go of fear and 'surrendering' in order to heal:

INTERVIEWER: If someone does get that Western diagnosis of cancer, then, what do you recommend they do?

HEALER #49: Surrender. I mean, I think the goal is to get the physical body, the emotional body, and the spiritual body back into alignment, back into balance. And, you know, there's love and fear, and people look at fear as, "False Evidence Appearing Real." I look at it as, "Forgetting Every Available Resource," and that resource is what we have inside of us. And I encourage my patients to surrender, to be at peace with dying and being at peace with living. And the more that you can bring the body into neutrality, the greater chance that you'll have of healing. ... So the mechanism is, once people surrender, truly surrender, not just saying it, but *truly* surrender to the core of their being, then the cells begin to grow in a healthy manner and the frequency begins to flow through their system and it's no longer as congested. And the more that that can happen, then the more the body can recover. But if people are in fear, then the whole energy fields, the subtle energy fields, the immune system – shuts down.

SR Subject #13, who overcame liver cancer, says something similar about releasing anger:

There was a certain situation that I was in for the 15 years of my married life that made me very angry. But I did not truly understand it, and I didn't really know how to express the anger... But that anger lodged in my liver. And so I was able to see the pattern in the Life Vessel [an energy treatment that she underwent] of how I understood my experience

and translated it in that way. So I can see how my thoughts and feelings contributed to the sickness. And understanding that pattern doesn't mean that it [the pattern] goes away, but it does mean that I can know it when it happens, and I can manage it now, which I couldn't before.

SR Subject #19 explains her theory on the connection between cancer and negative emotions which are either unexpressed or repetitively expressed:

I believe very much that my cancer or anyone's — I don't even call it my 'cancer,' [I call it] my 'diagnosis of cancer' — that the energy that was stuck in my body that appeared to be a mass or a tumor and which they [the physicians] called 'cancer,' [I believe] that it has been caused by these patterns that I was describing to you that don't get released, that they're continually overlaid over and over and over, wherever they are. So if it's kidney cancer, it's probably excessive fears; if it's lung cancer, it's grief of some sort that hasn't been resolved. I mean, I think they can be very much tracked back to patterns, thought patterns, thought forms that are not releasing and therefore they hold in the cell memory and they're not being released.

Finally, SR Subject #7 discusses how she decided to remove hatred and anger from her life in order to help her body heal:

Right away I realized that I had to purge hate, anger, pain — that the immune system could not recharge and fight the battle it had to fight if I was being distracted by anger, pain, resentment, trauma. I had to on a daily basis purge any kind of toxicity or negativity from my system so that I could operate at optimum health...so I had so little outside noise in my life — distraction, um, negativity — that I could really be building — or rebuilding — an existence that was based on health, wellness, fairness, goodness. So, what I was trying to do in my body was manifest in my body just a totally healthy host. And so, once I really started to re-frame my life and create a life that was based on harmony and wellness and balance and joy, my body really started to respond.

An important addendum to this code is that many subjects emphasized that the release of such negative emotion(s) must be *full and complete* in order for it to provide the maximum health benefit. For example, Healer #21 from Hawaii provides the following explanation:

INTERVIEWER: So, the key aspect of that change, in your opinion, is letting go of, or not dwelling on, the anger?

HEALER #21: Well, it takes more than that, because many people try not to dwell on something by suppressing awareness of it, see? That doesn't do any good. That's why some people have cancer symptoms or at least some of the symptoms. You can't just push it away. There actually has to be a change in relation to it. Now what a lot of people don't realize is we talk about forgiveness and that's greatly misunderstood because what it actually is, it's a state you reach when you no longer care about it anymore. It's not important enough to resist, however you reach that. Some people do it with words and some people do it with restitution and some people do it many different ways. You can also do it by just deciding that is just not important anymore, and this release state happens. And all the tension that was fighting against that, all that energy is now free to be for your healing and creativity or whatever else you do.

Feeling love/joy/happiness.

The fourth code that emerged frequently among both SR and Healer subjects was entitled, “Treatment: Mental/Emotional: Feeling Love/Joy/Happiness”. This code was applied whenever a subject discussed either shifting into feeling love/joy for the first time, or deepening one’s pre-existing feelings of love or joy towards oneself and/or others. It is important to note that no interviewee said that feeling love/joy was harmful to the healing process. Subjects reported different ways of achieving this feeling of love/joy. For some, the feeling arose naturally during their cancer journey, while for others, the feeling was the result of intentional mental/emotional practices, such as meditation, visualization, or psychotherapy. Finally, it may be that this treatment overlaps significantly with the previous code, “Releasing negative and/or repressed emotions,” because such release work may result in a person being able to feel love/joy/happiness more often. Nevertheless, “Feeling love/joy/happiness” was still coded separately, because it was not assumed that one must release repressed or negative emotions in order to experience moments of love/joy/happiness. As an example of feeling love/joy/happiness, Healer #19 from the U.S. discusses the importance of directing the feeling of love to one’s cancer cells in order to rehabilitate them back to healthy cells:

HEALER #19: Once you’re beginning to feel comfortable and feel relief about non-resistance, your second step would be more and more and more intended feeling of *love* directed visually...Your body does not know the difference between feeling good with a smile that’s genuine – let’s say you’re watching a comedy and just naturally smiling – or intending one. And when you do that, guess what happens? Endorphins: big, beautiful, loving endorphins. That do what? They send all these healing messages to the cells...They’re called feel-good hormones, and the more you can send feel-good hormones to the cell, what do you think will happen to it?

INTERVIEWER: (pause) More love?

HEALER #19: Yes, more love, thank you. And the more love? Then what do you think will happen to it?

INTERVIEWER: (pause) The higher it will vibrate and the healthier it will be?

HEALER #19: Correct. Absolutely...If you could see it physically, you would actually be looking at streams of endorphins rushing, feel-good hormones rushing, rushing, to create much more loving energy.

Similarly, Healer #16 from Hawaii describes her healing modality simply as a way of transmitting love from the healer to the patient:

FIELD NOTES: She [Healer #16] said that *lomi lomi* is “unconditional love” and that *lomi lomi* is about “giving unconditional love to the person you’re working on.” However, she said that the person has to be *open* to receiving that love (sometimes they are closed, in which case, the *lomi lomi* won’t have its full benefit.) When I asked her what she recommends for cancer patients, she said, “*lomi lomi*, and just lots and lots and lots of love.”

Similarly, Healer #5 from Brazil explains his theory about how health is directly linked to the feeling of happiness:

HEALER #5: Your health is connected to your happiness, I believe it. The happier you are, the more you enjoy life, you will reduce stress...

INTERVIEWER: When a cancer patient comes to you, how do you typically treat a

cancer patient? Or what would you recommend for anyone who has cancer?

HEALER #5: Well, first of all, a patient needs to receive love. The first thing they need is to feel like someone cares. I, the reason why I do my work is because I love to do my work. And when cancer patients come to me, I can see the lack of love. They actually forgot how to love themselves...And then when I put my hands on them and start channeling, I see myself planting little seeds. Now if I feel like that person is really sad, I put my hands on their heart and I plant seeds of happiness, you know, and love and positive attitude and joy and harmony and peace.

SR Subject #1 from Japan describes the importance of sending love to his cancer in order to heal it:

I thought that cancer was my child. So I sent my love to my cancer and pain decreased and I could sleep fine.... I touched this [points to the former site of his cancer] and said to my cancer, "I love you, I love you, I love you." And pain decreased. That's why I sent my love to my cancer always from morning until night...unconditional love, that's unconditional love. I said to it, "Thank you [points to the former site of his cancer] very much for existing."

Similarly, SR Subject #3 explains how love was the main factor in his healing from Stage 4 brain cancer:

You know, what healed me was the power of love. And, and that comes from many facets. And one was very much my family and my friends...We're all tied in with that power of love. I believe that's, that's so powerful in healing....There is a spirit 'Jose,' I believe, that is oddly enough the spirit of love. And so again that lends to the idea of the power of love, and I think that love is very much what healed me in many senses. But I also think all the spirits, you know, they work together. This is – this is love. This is God. They're all, they're all one, just as we're all part of the same, you know, life.

Finally, SR Subject #5 describes the intense feeling of love he felt after being treated by an energy healer, and how that feeling related to his healing:

FIELD NOTES: He [SR Subject #5] said that the energy/spiritual healer that he saw flooded his lymph system with energy, and that after the treatment he felt like "a teenager in love." He felt love toward everyone and everything. He said the treatment made him realize that if he could only find a way to feel that level of unconditional love all of the time, then he would be healed from his cancer.

Diet change.

The fifth code that emerged frequently among both SR and Healer subjects was entitled, "Treatment: Physical: Diet Change." It was applied whenever a subject discussed changing his/her regular food and/or liquid intake in order to promote healing. Although many small differences existed among the various dietary changes that subjects discussed, the overall trends included removing most meat, dairy, sugar, and refined grains from one's diet while increasing vegetables, fruits, whole grains, and purified water. Some participants referred to this as an 'alkalizing' diet, which they believe creates conditions in the body that are not conducive to cancer growth. Fasting for brief periods was also a common trend. As an example of this code,

Healer #35, an American trained in a Peruvian healing tradition, describes the dietary restrictions that she recommends to all cancer patients:

If somebody has cancer, the first thing they have to do is to stop meat, dairy, and sugar. If they won't do that, I know they don't want to live. Is it easy? No. But it's much better for you. All sugar directly feeds cancers...Meat and dairy have so many antibiotics and hormones in them that it causes the growth of cancer cells...The other thing I have people do is take apple cider vinegar 2 to 3 times a day, because they need to get the pH of their body to the sixes, 6.8, because cancer can't live in a 6.8 pH.

Healer #38 from Thailand believes in eating non-processed foods in order to keep one's body, especially the bowel, as healthy as possible:

I don't eat fast food, food from a machine, or dairy products. But I eat everything that comes up from the nature. That's my daily eating habit. Everything that comes through the can, it has no life, it's all dead. Think about it – many factory dates, expires 2010 — how does it last for 4 years? You pick fruit and chop, it dies. It lasts 3-4 days, maybe one day. So I eat alive food. Everything that comes out through the nature...The bowel is the same as like a flowing river water — when the water's flowing, you always get clean water. Same as our colon. If you want to be happy and live long, you need to keep your colon happy and healthy and unblocked.

Healer #36, also from Thailand, explains the benefits of fasting for cancer or for any illness:

HEALER #36: Fasting is a wonderful vehicle for ridding the body of toxins that have accumulated and improving the functioning of the waste disposal system in our bodies, so that we don't accumulate further toxins — you know, poisonous substances in the body which suppress the immune system and detract from optimum health...

INTERVIEWER: ...If you were diagnosed with cancer, what would you do?

HEALER #36: I would go on a long term fast, myself. I would go on an extended fast and I would oxygenate my tissues...First, I'd want to get rid of the toxins and then I'd want to eat toxin-free food...I'd want to fast, basically to cleanse the tissues and to starve a fast-growing malignant tumor. It's the same thing that the chemotherapy and all the therapies do – they kill the cancer, and they can kill *you* in slightly higher doses, but the doctors want the dose just not high enough so that you can survive, you know. It's very toxic for you. But it'll maim and obliterate the malignancy. But, you know, fasting is a natural way to go about that same way...With most animals and organisms, when they're very ill, they stop eating. That's nature's way of doing this.

SR Subject #1 from Japan explains what he changed in terms of his eating habits after he was put on hospice care:

SR SUBJECT #1: So I drank water and it's a fasting actually.

INTERVIEWER: You drank water but you did not eat anything?

SR SUBJECT #1: No, because I couldn't eat anything at that time. Only water every day. But I, even [though] I was not treated by any medical treatment, my body was gradually getting better and better. That's the first step, only water, only drinking water. My body was changing only better...And chew well organic food...And the colonic irrigation.

INTERVIEWER: Colonic irrigation is important?

SR SUBJECT #1: Very.

SR Subject #15 describes the major dietary changes she made, including an unintentional fast, in lieu of the recommended surgery and chemotherapy:

And so I started with – you can't eat sugar, flour, dairy products. It's mostly vegetables, fruit and no red meat whatsoever, a little chicken here or there or fish but I didn't do a steady diet of that. It was mostly green stuff. And juicing cabbage is very important. So we did that. And you know, when you quit eating – I lost 50 pounds in two months, because for a while I didn't dare eat anymore because they were saying your eating habits, certain things you eat, are worse for it [the cancer]. So I was afraid I was feeding it. So I quit eating for a while. And then slowly I started, you know, putting the right food back in. But you kind of — because your system isn't used to that — you kind of get sick. So it's a big change to your body. But then once you get used to eating like that, then that food is what tastes good and the other food doesn't taste that good anymore, the processed food...and I cut out alcohol. I pretty much just drink water. I don't drink pop, no milk. Just pretty much water is what I drink.

Finally, SR Subject #16 explains the major changes he made in both his diet and lifestyle to help overcome his stage 4 cancer:

Just going on a basic, good, predominantly raw vegan diet alone and supplementing it with lots of juices, like lots of carrot juice, which of course is packed with nutrients. And the reason why the juices are so important is we have depleted basically all of our produce. Even a lot of the USDA certified organic produce does not have the same nutritional value it once did. So that's the reason for using juices as a supplement. There is logic behind it. It's concentrated, packed nutrition. So we get a lot of nutrition to the body. All of a sudden the body says, 'Wow!' It's like watering the lawn when it's dry. I'm getting all the nutrition that I need and all of a sudden diseases start to go away. ...You know, we've got to get away from Western medicine and go back to basics and just make changes, simple lifestyle, very, very basic stuff — just change your diet, exercise, fresh air, sunshine, faith in God, reduce stress, balance, temperance.

Taking herbs or vitamins.

The sixth treatment that was frequent among both SR and Healer subjects was entitled, "Treatment: Physical: Taking herbs or Vitamins." This code was applied whenever a subject mentioned taking herbs or vitamins to help treat cancer. Allopathic drugs that require a prescription by a physician were not included in this code (interestingly, the separate code entitled, "Treatment: Physical: Prescription Drugs" emerged very infrequently among both groups of subjects). The herbs and vitamins that subjects used to help treat cancer were often described as functioning to either 1) detoxify the body; 2) restore balance to the body; or, 3) strengthen or activate the immune system so that it could become strong enough to eliminate cancer from the body. For example, Healer #46 from Africa explains how she treats patients mainly with herbs:

TRANSLATOR: Aloe Vera. Yeah. And pepper.

INTERVIEWER: And these all help the immune system?

TRANSLATOR: She says yes, they're able to boost the immune system...

INTERVIEWER: In a more general sense, I'm wondering how, in her belief system, a

person can stay healthy? What are all of the things that they should do for health?
TRANSLATOR: She says it's just through herbal medicine. That's what she says.

Healer #7 from China has developed a proprietary herbal patch made of over 60 herbs that she uses topically on breast cancer patients:

TRANSLATOR: The patch has more than 60 herbs in that patch. And she also figured out the mechanism or pathways involved with this. Because today it's with the Prolactin [PRL] pathway of the PRL...so she figured out how to take advantage of her knowledge of the endocrine or the PRL, you know, modulated in the endocrine hormonal system to regulate the tumor growth. And this is especially important in the inflammatory breast cancer and the fibroids type of breast cancer. And so, guess what is the efficacy rate [of her patch] now? So far, okay, there's about 400,000 users of the patch. And the efficacy is close to 97, 98% in terms of positive response in terms of—

INTERVIEWER: In remission?

TRANSLATOR: --shrinking the tumors. And in some cases, even the tumor disappears.

Healer #30 from Japan uses heat in order to infuse both the mugwort herb (a.k.a. moxa) and Vitamin B17 into his patients' skin:

TRANSLATOR: It is charcoal and moxa together. When he use charcoal, he use long time, that's why he use charcoal – you can use for long time...And this [she holds up a bottle of liquid supplement] includes Vitamin B17.

INTERVIEWER: So he puts that [B17] on the skin before he puts on the moxa?

TRANSLATOR: Yes...

INTERVIEWER: ...So, I want to understand why this treatment makes the cancer go away? For example, why does he use the heat? How does it work?

TRANSLATOR: He says makes the immune system stronger. Makes new cells.

INTERVIEWER: This treatment helps your body to make new cells?

TRANSLATOR: Yes.

SR Subject #8 says that one of the most important aspects of healing her physical body was taking a particular immune-boosting supplement:

INTERVIEWER: Of all the things you just told me about, what do you think was the most influential for your healing, or are they all pretty equal for you?

SR SUBJECT #8: Oh, boy. I would say that, for my body, that would be the *Wholly Immune* [supplement] that I got, that I started... It has like about 50 different things in it...He [a friend] researched it and he said, "You've got, in that *Wholly Immune*, you've got seven cancer fighters. If you were taking them on their own it wouldn't be as potent," but he said because they're in combination, it acts as a cancer destroyer.

Similarly, SR Subject #17 discusses an immune-boosting supplement that she used to help heal her cancer:

And so then he [a physician] has a lymphoma recipe that he actually sells you in a bottle and it's actually packaged for like breakfast and dinner and it's about, I don't know, \$360 a bottle and it lasts you a month. And it's got everything in it. To be honest with you, you spend that much going out and getting everything individually. You really do. It's got all the Glandulars in it, it's got Quercetin, it's got Resveratrol, it's got your Vitamins

A, C, D, E, it's got it all.

Finally, SR Subject #18 lists the variety of supplements that, in his opinion, allowed his body to remove the cancer cells. It is important to note that Subject #18 is not a physician or health professional, and yet he describes his healing process with very medicalized terminology.

Dr. William Donald Kelley's research made a lot of sense to me, where he treats cancer as a type of placenta sack that shows up in the wrong spot, and his treatment involves basically telling the body, chemically, to have an abortion. So, I started following Kelley's procedures, and got myself on IP-6....Since IP-6 is the messenger molecule, it needs a message to carry, and that is made of trace minerals. [I] Added a trace mineral supplement, but the molecule is still considered a "free radical" by the body, so I added Vitamin C to allow free radical passage from the blood stream through the cell walls. Then Aloe Vera juice - Vitamin E - to aid in cell reproduction and recovery. Add to that the arid climate of the West, and eliminating the re-infection of flukes and parasites, well, the immune system returned to being able to do what it was designed to do, without being overwhelmed. Added some of Clarke's anti-parasite herbs and come Thanksgiving, was doing quite well. No spontaneous [i.e., quick] remission or anything like that—it took a couple of years before all the stomach problems cleared up and everything started working properly again. But all I used were herbals and better nutrition to create a "cancer abortion."

Frequent treatments among SR subjects.

In addition to the six codes described above, which were among the top ten most frequent codes for *both* the SR and the Healers group, three additional codes were among the top ten most frequent codes for the SR group, but were not among the top ten most frequent codes for the Healer subjects. These three codes are as follows:

- Treatment: Mental/Emotional: Taking Control of Healing Decisions
- Treatment: Mental/Emotional: "I'm not going to die" Attitude
- Treatment: Mental/Emotional: Receiving Social Support

All three of these codes also emerged in many of the Healer interviews, although not nearly as frequently. One possible reason for this discrepancy in frequency may be that the SR group was comprised of people who had themselves healed from cancer, while the vast majority of people in the Healers group were people who had not personally healed from cancer, but rather had helped others to heal from cancer. Therefore, these three codes may represent issues that are more pertinent for persons actually going through cancer treatment.

Taking control of healing decisions.

The first code that was more frequent for the SR group than for the Healer group was entitled, "Treatment: Mental: Taking Control of Healing Decisions." This code was applied whenever a subject discussed the notion of taking over some or all of the decision-making power for his/her healing treatment plan. Interestingly, this was the most frequent Treatment code to emerge among the SR subjects. For example, SR Subject #9, a scientist from the U.K., writes about taking control of her healing treatment in her autobiographical book on her cancer recovery:

Once the panic and fear had subsided after the breast cancer returned for the fifth time, I felt as certain as I ever had been that the only person who could save me was the scientist within... For five years, I had done everything my doctors had advised and undergone all the treatments that they had prescribed... [this time] I decided that, instead, I would look at breast cancer in a detached way as a natural scientist, and try to understand the disease as a type of natural phenomenon. (Plant, 2001, pp. 65, 68)

SR Subject #10 describes how he serendipitously began to take control of his healing, instead of planning for his death:

I went to a bookstore because I remembered seeing a book there on how you die. So I wanted to figure out how prostate cancer progressed and how you eventually died from it. Instead, I found Patrick Quillin's book on, "Beating Cancer with Nutrition." So I thought, yeah, I'll give this a try, you know... I think a positive mind is very important. And your attitude. I'm determined not to let this uh, control me. I'm gonna control it. The cancer, that is.

Finally, SR Subject # 14 explains how he had to go against his family's wishes in order to take control of his healing plan:

They [SR Subject #14's daughters and wife] were quite keen for me to have the surgery. But the more I thought about it and the more I inquired about the side-effects and the success rate, I just did not believe at all that that was the way to go... Once I had spoken to a number of testimonies from 'Nutrition 2000' – they offered me some names, who I called – and every one of them had amazing success, with different cancers and what have you, so I decided to follow their route... I felt completely confident that it was not the way for me to go for surgery. And I'm so glad that I didn't, because another guy had the same diagnosis. He's the same age as me, diagnosed almost to the day, it was in the same week, I think it was. And he went under the knife and had the surgery and within a year, it [the cancer] was back.

Having an 'I'm not going to die' attitude.

The second code that was more frequent among the SR subjects than the Healer subjects was entitled, "Treatment: Mental: 'I'm not going to die' Attitude." This discrepancy between Healers and SR subjects is perhaps understandable when one considers that SR subjects are facing imminent death with their cancer diagnosis, while Healers are not. This code was applied whenever a subject emphasized the importance of believing very deeply that he/she was not going to die of cancer. For example, SR Subject #6 describes how his healer's optimism allowed him to have an "I'm not going to die" attitude:

I believe that there is a mind and it is powerful and it can affect the physical operation, physical makeup of the body. The first thing that occurs to me is not of a placebo, but also 'nocebo.' And when the doctor says you have cancer, to the popular mind that means you're going to die. And I think the mind, our social mind, not just the individual's [mind], is heavily affected by that mental notion... One characteristic of Tom's [SR Subject #6's healer] treatment is that everything is very positive. There is a great deal of hope and there's a great deal of experience and evidence that confirms that hope... With Tom's class it was just basically hope, it wasn't anything like fighting the negative feeling or anything; it was just a conviction that things would get better.

Similarly, SR Subject #8 explains how her “I’m not going to die attitude” developed after her diagnosis:

For a short, brief time I went, “Oh my God, what if?” This was after I was home [from the hospital]. And I was thinking, “I’ve got two sons, and they’ve got family, and there are the three grandchildren.” And I’m thinking, “What if?” And then I gave myself a slap in the face and went, “Shut up.” And, you know, just, “You’re not going anywhere so, that’s enough of that. Don’t even go there.” And I remember my son, my youngest son saying, “Mom, you’re not dealing with your feelings.” You know? And I said to him, “I’ve already – I’ve gone there, I’ve gone to the ‘What if?’” And then I was like, “No, I need to take charge of this. I need to do what I have to do here. And I’m not going anywhere.”

Finally, SR Subject #15 describes her frustration with the dismal prognosis offered by her oncologist, and how that spurred in her an ‘I’m not going to die attitude’:

The doctor said to me that after you get this surgery done and have the chemo and radiation, whatever, he said, “We can give you five more years to live.” And I thought, “I want to live more than five years!” So, when the doctor said that, I got mad. I didn’t say nothing to the doctor but I got mad and I knew right then I wasn’t doing it, I wasn’t going to do it, ‘cause I knew about – I had already talked to [a friend] and I already had information about [alternative dietary cancer treatments]. So I kind of went out with an attitude of, ‘This isn’t going to beat me. I’m going to do this.’

Receiving social support.

The third and final code that emerged more frequently among the SR subjects than among the Healer subjects was entitled, “Treatment: Mental: Receiving Social Support.” This discrepancy in frequency may result from the fact that most healers work one-on-one with their patients, after which the SR subjects then spend the rest of their week surrounded by family and friends. Therefore, the role of social support in cancer recovery may be more apparent to cancer patients than to their healers. This code was applied whenever a subject described the support, either practical or emotional, of family or friends. For example, SR Subject #13 describes the outpouring of love that she received from those around her, and how such an outpouring increased her own self-love, or self-value:

One of the things I truly learned is that I am valued. ... I was able to share the reality of my experience, and people resonated with that and they just stepped in to do whatever was needed. It was a huge validation of the universe and that all life is valued. I wasn’t valued because I’m me, my person, necessarily, but because my *life* has value. All life has value, and that includes mine. ...It’s a, it’s a wonderful consequence of this disease, is the outpouring of love. Well, maybe it’s the purpose.

SR Subject #10 describes how a social relationship gave him a renewed reason to live:

INTERVIEWER: So would you say that your will to live has been strong from the get go?

SR SUBJECT #10: Ah, no. It’s picked up since I’ve met someone really nice that I enjoy being with. If that person wasn’t around, I’d probably drink myself to death or

something....You got to have something to live for. If you have nothing to live for then you know, why bother.

Finally, SR Subject #2 explains how various forms of social support contributed to her recovery from cancer:

I've joined, like, support groups, 'cause I've read that, um, going to a support group increases your longevity. Just as a way to let out a lot of things that, you know, you won't really be able to talk to other people about without them thinking about you as a cancer subject. So I thought that was like a healthy thing to do. That's also why I wanted to continue to be a health librarian, because I felt that from people I've met who have their own stories, I've been able to benefit from understanding what happens when you have cancer and what happens when you're in a situation where things are relatively unknown. How people cope, and things like that.

Frequent treatments among healers.

In addition to the six codes described earlier – which were among the top ten most frequent codes for *both* the SR and the Healers groups – two additional codes were among the top ten most frequent codes for Healer subjects, but only among the top twenty most frequent codes for SR subjects. These two codes are as follows:

- Treatment: Energy: Healing, Unblocking, or Infusing
- Treatment: Physical: Strengthening or Activating the Immune System

One possible reason for the discrepancy in frequency for these two codes may be that the Healers are often the ones performing the energy healing, while the SR subjects are passively receiving it. Therefore, it is plausible that energy healing may be more emphasized by the group of people that actively perform it (i.e., the Healers). Similarly, the Healers may be more concerned with the mechanisms behind their treatments – such as the mechanism of boosting the immune system – whereas the SR subjects may be less concerned with the mechanisms, and more concerned with the outcomes of their treatment. Despite this discrepancy in frequency, it is important to note that even though these two codes were not among the top ten most frequent treatments for SR subjects (as they were for the Healers), they were among the top twenty most frequently discussed treatments for SR subjects, thus indicating that these two codes were still very common treatments for *both* groups of subjects.

Healing, unblocking, or infusing energy.

The first code that emerged more frequently among the Healers than the SR subjects was entitled, “Treatment: Energy: Healing, Unblocking, or Infusing.” This code was applied whenever a subject discussed generating or receiving energy as a way of healing. The term “energy” was described by subjects as a force that is transmitted in a way that is usually not visible, but rather felt. Participants described this feeling of energy transmission as one of “warmth,” “tingling,” or “love.” For example, Healer #13 from the U.K. describes the interplay between emotions and energy blockages that is typical during her spiritual energy treatments:

I work with releasing emotions on a cellular level, when emotions are released energetically, where I will just scan with my hand a few inches away from their body and it's very powerful yet very gentle. And energetically, these emotions that are held in the

cells just all let go. Then they start to feel a shift. They feel the self-control come back. They're not giving in to the cancer. ... I will scan the seven energy points, the chakras, which are the vortexes of energy related to every organ and gland, which you probably know. And then I will work right through and then pick up where the tumor is and start to work specifically with the cancer and shift any blockage of energy. And I will just feel in my hands just a lot of heat or tingling and they [the patients] will feel all kinds of sensations.

Similarly, Healer #6 from China explains the Traditional Chinese Medicine view of stagnated energy, and how its removal (i.e., via acupuncture, herbs, chi gong, and emotional shifts) can lead to a remission:

HEALER #6: There is something that is completely larger than you, and you resign yourself to it, whether you call it God or...what have you. And in order to become actually integrated with that, it requires that this wall you've surrounded yourself with – just stagnated energy – that has to go, right? ... It's kind of like they [people with cancer] form like a ring of traffic around them.

INTERVIEWER: So losing that fear, or stopping the grasping and letting go and accepting, suddenly clears out all this traffic so that you can actually connect to that energy that's larger than you, and also so the energy of that "wall" can finally come back inside of you and start healing?

HEALER #6: Right. So it [your wall of stuck energy] goes from being completely meaningless in a place it's not supposed to be in your external san jiao structure, to slowly dissipating and dissolving and returning to the internal san jiao – the core of your body – where it needs to be. At the same time this wall that has been blocking you from the truth of [that larger] reality essentially goes away. And that's what Spontaneous Remission is in my mind.

Healer #2 from Brazil purportedly transmits energy from higher spiritual beings in order to help heal his patients, such that energy blockages are released and new energy is infused into his patients:

FIELD NOTES: The healing that occurs at the center, all of which is free of charge, can best be described as energy or spiritual healing, since the vast majority of people cannot physically see what is being done at the center, although many notice physical changes immediately *afterwards* (e.g., a palpable tumor disappearing, being able to walk again, etc.). The spirits who purportedly heal through the man Jiao do not explain much about what they are doing exactly, although they have said repeatedly over the years (via Jiao) that they use the "energy of love" or the "energy of God" to do their healing work. The first room that a person walks through purportedly functions to energetically cleanse any negative or 'stuck' energy in that person's energy field; the person is also supposedly diagnosed at this time by the spirits in this room. The second room that a person walks through supposedly functions to provide him/her with a surge of high-frequency, loving energy, which is supposed to speed up (or start) the healing process. Finally, the incorporated spirit purportedly gives the person another surge of high-frequency healing energy when they speak briefly. After this, energetic "operations" and/or passion fruit leaf herbal supplements (which have been purportedly infused with healing energy from the spirits) are the most commonly recommended treatments.

As an example of how SR subjects also discussed using energy treatments in order to heal, SR

Subject #13 describes the ‘frequency’ treatment she received to help remit her cancer:

I had heard about a guy that had invented a new thing that had been very effective on a variety of illnesses. This approach was a frequency approach. So he created a box that you lay in and then you hear music and the box vibrates to the music. So you’re in a very complete space. Your entire body is vibrating at the same level of frequencies of music, and the theory, of course, is that healthy cells vibrate at a certain level. Unhealthy cells vibrate at a different level. So if you change the vibration to health, that which is not healthy, well, sort of disappears.

Strengthening or activating the immune system.

The second code that emerged more frequently among the Healers than the SR subjects was entitled, “Treatment: Physical: Strengthening or Activating the Immune System.” This code was applied whenever a subject discussed the importance of strengthening or activating the immune system in order to help recover from cancer. Although this code relates more to a mechanism of healing rather than to a specific healing treatment, it is nevertheless included in these findings due to the high frequency with which it was referred to by all subjects. For example, Healer #28, a physician from Japan, presents an interesting theory about how certain bacteria interact with the immune system to create cancer:

FIELD NOTES: In his [Healer #28’s] opinion, sub-optimal behaviors, such as breathing through the mouth, eating cold foods and liquids, or doing things that may slightly lower the body temperature (e.g., stress), allow bacteria that typically only flourish in the intestine (called ‘enterobacteria’) to infiltrate the cell membrane of cells in other parts of the body. He believes that most cancers (and most auto-immune diseases) are actually bacterial infiltrations of this sort. Therefore, he treats cancer patients with a combination of 1) individualized antibiotics; 2) a probiotic called ‘Bifidus Factor’; 3) an instruction to consume only warm or hot foods and liquids; and, 4) an instruction to breathe in and out only through the nose as much as possible. He showed me the files of five cancer patients that have healed from cancer using only these methods, and claims to have numerous similar files.

Healer #27, an oncologist from Japan, has an equally interesting theory regarding what causes cancer cells to develop. His theory centers on behaviors that weaken the immune system, and treatments that strengthen it:

FIELD NOTES: For any patients who show an elevated level of cancer markers using his [Healer #27’s] unique blood test, he first recommends various lifestyle and dietary changes. He believes that a drop in core body temperature can cause mitochondria to shut down, which he believes can cause a previously healthy cell to replicate in a cancerous manner. Furthermore, he believes that such temperature drops can be caused by stress, lack of sleep or exercise, an unhealthy diet, or the repression of emotions. Therefore, he first recommends lifestyle and dietary changes in order to rehabilitate the mitochondria, thereby rehabilitating the cancerous cell back into a healthy cell. If, after 3-6 months, there is no improvement in the blood test, he will recommend immune-boosting herbs, a week of fasting, herbal detoxifying treatments, or heat therapy (e.g., sitting in a bathtub of hot sand) in order to rehabilitate the cancerous cells back into healthy cells. After that, and only if necessary, he will provide patients with intravenous, immune-boosting treatments, such as endogenous TNF induction or adoptive lymphocyte therapy.

Healer #42, an American trained in Traditional Chinese Medicine who works primarily in collaboration with oncologists, describes the difference between a strong immune system and an active one:

INTERVIEWER: What is the process of getting rid of cancer cells?

HEALER #42: Well, everything in Chinese Medicine in that respect would be to motivate the immune system, to physically attack, to physically attack the cells. So that's a little different than just simply "strengthen the immune system." It doesn't seem to quite get the job done. You know, most people when they're diagnosed with cancer have very good, intact-appearing immune systems, and quantitatively there are plenty of natural killer cells, they have plenty of T-cells, they have plenty of B-cells, and they have plenty, in terms of numbers. But these cells appear to be unmotivated to do anything. Motivation seems to be the key in Chinese Medicine...People with compromised immune systems don't necessarily have more cancer than the general population ...

INTERVIEWER: So the Chinese medicine view of how to treat cancer would be to stimulate the energy, the immune system, the body to attack the cancer cells, and you can do that through acupuncture that kind of stirs up the energy, and also through herbs?

HEALER #42: Yes.

INTERVIEWER: Are the herbs attacking the cancer cells?

HEALER #42: Yes, I mean, certainly, a lot of chemotherapy drugs come from plants.

Finally, as an example of how SR subjects also discussed strengthening the immune system, SR Subject #10 explains his theory about how his strong immune system has helped to keep his prostate cancer in remission:

Testosterone is what makes the cancer go, sugar is what feeds it. The theory I've developed is starve the cancer and let my immune system kill it...I think everybody has cancer. And I think everybody's immune system fights it differently...If you've got a weak immune system, you don't have a chance. And everything you put in your mouth affects the level of your immune system – plus other factors, you know, exercise and all of that. If you don't have a strong immune system, eventually it [cancer] is gonna get you.

Qualitative findings summary.

In summary, the qualitative data that emerged from the 70, hour-long interviews in this study (50 Healer interviews and 20 SR interviews) revealed three underlying beliefs about health and illness, and over 75 recommended treatments to elicit a cancer remission. The three underlying beliefs that emerged were: 1) Change the underlying conditions which allow cancer to thrive; 2) Illness=Blockage/Slowness; Health=No Blockage/Movement; and, 3) A body-mind-spirit interaction exists.

These three underlying beliefs guided both Healer and SR subjects in their choice of cancer treatments, which included over 75 physical, mental/emotional, energetic, and spiritual treatments. Among the top ten most frequent treatments to emerge for both Healers and SR subjects were the following six treatments: 1) Spiritual: Achieving a transcendent state or a deepening of spirituality; 2) Mental/Emotional: Trusting in intuition regarding treatment decisions; 3) Mental/Emotional: Releasing negative and/or repressed emotions; 4)

Mental/Emotional: Feeling love/joy/happiness; 5) Physical: Changing one's diet; and, 6) Physical: Taking herbs or vitamins.

In addition to the preceding six treatments, the following three treatments – all mental/emotional – were very frequent among SR subjects, but not as frequent among Healer subjects: 1) Taking Control of Healing Decisions; 2) Having an “I’m not going to die” Attitude; and, 3) Receiving Social Support. Finally, two treatments emerged slightly more frequently among the Healers than the SR subjects: 1) Energetic: Healing, Unblocking, or Infusing Energy; and, 2) Physical: Strengthening or Activating the Immune System.

In summary, the three underlying beliefs and eleven most frequently recommended cancer treatments that emerged from the qualitative data analysis provide at least fourteen potential causal theories for why SR may occur, thus achieving this study's first research aim, which was to collect a wide range of causal theories for SR. This study's second research aim was to investigate one particular causative theory for SR, namely that a strong Sense of Coherence (SOC) may be associated with SR. This second research aim was addressed by analyzing the responses from the SOC-13 scale that was given to Phase II (SR) subjects; the findings from this quantitative scale are the focus of the next section.

Quantitative Findings

Numerous studies have established an association between a strong Sense of Coherence (SOC) and good physical health (see Eriksson & Lindstrom, 2006). Therefore, the quantitative portion of this study sought to investigate the hypothesis that a strong SOC may be associated with SR. 17 out of 20 Phase II (SR) subjects completed the Sense of Coherence scale (SOC-13) (response rate = 85%) (see Appendix B, p. 4). The SOC-13 scale has a potential score range of 13-91; the seventeen SR subjects in this study had a mean score of 73.4 (SD 12.5, range 54-89). For additional metrics regarding this study's SOC responses, see Appendix D. Table 4 lists this study's SOC mean and also the SOC means from five other relevant studies that measured U.S. or Canadian citizens using the SOC-13 scale.

Table 4
Sense of Coherence (SOC) among Relevant Samples

Sample Population	n	Mean SOC
U.S. non-Spontaneous Remission (SR) cancer survivors ^a	160	77.5
U.S. "exceptional" cancer survivors ^b	160	76.1
SR cancer survivors ^c	17	73.4
U.S. healthy women ^d	89	67.4
U.S. rheumatoid arthritis patients ^e	828	65.3
U.S. residential care facility employees ^f	728	62.5
Canadian general population ^g	17,626	59.0

^a (Gotay, et al., 2004)

^b "Long-term cancer survivors who had exceeded their life expectancies" (Gotay, et al., 2004)

^c Present study: English-speaking SR survivors (N=17) from the U.S. (n=13), Canada (n=2), Japan (n=1) and Germany (n=1)

^d (Motzer, Hertig, Jarrett, & Heitkemper, 2003)

^e (Callahan & Pincus, 1995)

^f (Mackie, Holahan, & Gottlieb, 2001)

^g (Wolff & Ratner, 1999)

While statistically significant comparisons of the means listed in Table 4 were not possible due to the small (< 40) and non-random nature of the present study's SOC respondents (n=17), a cautious comparison of the SOC means in Table 4 tentatively suggests that *all* cancer survivors – whether due to SR or allopathic medical treatment – may have a higher SOC than other populations, both healthy and unhealthy. In addition, the data in Table 4 tentatively suggests that non-SR cancer survivors may have a similar or even higher SOC than SR cancer survivors. These cautious comparisons will be further explored in the following "Discussion" section, along with other theoretical and research implications from this study.

Discussion

This section presents this study's findings in the context of other studies, discusses the limitations of this study, and describes the implications that this study's findings have on theory, research, and practice.

The purpose of this study was to explore the reasons why Spontaneous Remission (SR) of cancer may occur. Specifically, the research aimed to collect a wide range of causal theories for SR from both Healers and from persons who have personally experienced SR. Salutogenesis, or research into what makes people healthy as opposed to sick, was used as the guiding framework for this study, while cross-sectional, retrospective, mixed methods were used to collect data in two phases. In Phase I, open-ended, hour-long interviews were conducted with 50 healers and 20 SR subjects regarding why they believe SR may occur. In Phase II, the 20 SR subjects were given a series of closed-ended questions about why their SR may have occurred (considered part of the 'qualitative' data), as well as an SOC-13 scale that quantitatively measured their 'Sense of Coherence.' All qualitative and quantitative data were then analyzed in order to answer the study's two, main research questions.

Research Question #1

This study's first research question asked, "What causative theories do physicians, alternative healers, and Spontaneous Remission (SR) survivors propose for SR?" The qualitative data analysis revealed that alternative healers, physicians, and SR survivors most frequently proposed six different 'Treatments for cancer' that may potentially bring about SR, all of which are based upon one of three 'Underlying Beliefs' about health. In addition, SR subjects also frequently discussed three 'Treatments' that Healers did not discuss as frequently, while the Healers discussed two 'Treatments' that the SR subjects did not discuss as frequently.

Treatments for cancer.

More than 75 different treatments for cancer emerged from the present study as potential causal theories for why SR may occur. These treatments included physical, mental/emotional, energetic, and spiritual treatments. Among them, six treatments were among the top ten most frequently discussed treatments for both the Healer and SR groups. When listed in order of spiritual, then mental/emotional, then energetic, and finally physical treatments, the first most frequent treatment was a spiritual one entitled, "Achieving a transcendent state or a deepening of one's spirituality." In this study, Healers recommended and SR subjects described connecting to a spiritual energy or belief system in order to help heal from cancer. This finding is consistent with Wagner (1998), Dige (2000) and Mehl-Madrona (2008), who also found that a majority of the SR subjects in their qualitative studies reported a deepening in spiritual or existential beliefs prior to remission. This study's finding also relates to Sephton et al.'s (2001) exploratory study of 112 women with metastatic breast cancer, which showed that those who scored highly on spirituality measures also had higher immune counts, even after controlling for demographic, disease status, and treatment variables. Sephton et al.'s (2001) finding may explain a mechanism behind the apparent relationship between increased spirituality and good health. Additional psycho-neuro-immunological (PNI) studies that investigate the relationship between spirituality and immune function are therefore warranted.

The second treatment that emerged frequently among both SR and Healer subjects was a mental/emotional treatment entitled, “Trusting intuition regarding cancer treatment.” This code referred to trusting either in one’s own intuition, a friend/healer’s intuition, or the body’s intuitive ability to heal itself. This treatment overlaps with other treatments that emerged in this study, such as “Taking control of one’s healing plan” or “Having an ‘I’m not going to die’ attitude.” However, “Trusting in intuition” was nevertheless coded as a unique treatment because it refers to making a decision based on instinct rather than on knowledge. Little to no research has investigated the role of following one’s intuition in relation to cancer survival; however, theorists have written about the body’s intuitive (and therefore subconscious) healing ability (e.g., Schlitz & Lewis, 1997), while research in the field of organizational psychology has investigated intuition’s role in decision-making (e.g., Bargh & Ferguson, 2000; Zsombok & Klein, 1996). Further research is warranted regarding the specific role of intuition in making medical decisions, and whether or not a patient or healer’s use of intuition when choosing medical treatments improves cancer survival rates. The recent movement toward consensus decision-making between a physician and patient (e.g., Charles, Gafnia, & Whelan, 1999) will facilitate such intuition studies, because this movement seeks to take into account patients’ wishes.

The third treatment that emerged frequently among both SR and Healer subjects was a mental/emotional treatment entitled, “Releasing negative and/or repressed emotions.” SR subjects and healers who described this treatment believed that releasing emotions such as fear, anger, grief, etc. could aid in the cancer healing process. This finding is consistent with Mehl-Madrona (2008), Schilder et al. (2004), and Ventegodt et al. (2004), who also found that SR subjects reported releasing negative emotions such as sadness, anger, helplessness, fear, or guilt prior to their remission. On a related note, one prospective study showed that neuroticism is positively associated with cancer death (Nakaya et al., 2006), while a review of PNI immune studies reported that negative emotions increase the body’s production of pro-inflammatory cytokines, a condition that contributes to the formation of inflammation-related diseases, including cancer (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002c). However, such studies have shown only the *deteriorating* effects that negative emotions can have on health. Salutogenesis-oriented PNI research that investigates the possible, physiological *benefits* of releasing negative emotions in relation to cancer survival is therefore warranted.

The fourth treatment that emerged frequently among both SR and Healer subjects was a mental/emotional treatment entitled, “Feeling love/joy/happiness.” It is important to note that this code does not necessarily refer to a stable personality trait that was present before diagnosis; rather, the code refers to subjects who described purposefully engaging in activities that would bring them a feeling of love/joy/happiness. Subjects who described this treatment believe that feeling love/joy/happiness contributes to the cancer healing process. This finding relates to Schilder et al.’s (2004) finding, in which SR subjects reported an increase in “intensely poignant activities” prior to their remission, and to Mehl-Madrona’s (2008) finding, wherein SR subjects reported “major improvements in self-esteem” prior to their remission. If it can be assumed that both poignant activities and improvements in self-esteem lead a person to feel love/joy/happiness more often, then the present study’s finding presents a possible common thread between Schilder et al. (2004) and Mehl-Madrona’s (2008) findings. Ventegodt et al. (2004) and Huebscher (1993) did not report a finding of “feeling love/joy/happiness” among the SR subjects that they

studied, although they did find related psychological changes that could lead to feeling more love/joy/happiness, such as releasing negative emotions or living a full life. Meanwhile, a review of empirical studies from the field of Psycho-neuro-immunology (PNI) has shown that positive affect is associated with lower cortisol, heart rate, and blood pressure levels, and with reduced inflammatory markers (Steptoe, Dockray, & Wardle, 2009). Further PNI research is needed to understand the exact mechanisms by which positive feelings may improve physical health and/or contribute to cancer recovery.

The fifth treatment that emerged frequently for both SR and Healer subjects in the present study was a physical treatment entitled, “Diet Change.” While the precise changes that each subject described varied, the overarching commonalities included eating a vegetable-rich diet that was very low in meat, dairy, alcohol, sugars, and refined grains. Subjects in this study believed that shifting their diet in this way contributed to their cancer healing; in fact, some SR subjects believed that such a dietary change was the primary cause of their SR. While no studies have yet been conducted to determine whether changing a cancer patient’s diet can help to remit their active cancer, prevention studies have been conducted that investigate the protective influence that diet may have on cancer development. For example, Campbell & Campbell’s (2005) epidemiological finding relates lower levels of animal protein intake and higher levels of both fiber and vegetable intake with the lower cancer rates in China as compared to the U.S. In addition, a large U.S. study (n=1,490) showed that breast cancer survivors who eat five servings of fruits and/or vegetables a day and are physically active have a 50% reduction in mortality compared to women who do not eat or exercise as such (Pierce et al., 2007).

Furthermore, animal studies have shown that cancerous tumors increase significantly when carcinogen-exposed rats are fed diets that contain more than 10% of animal protein, while such tumors are *completely repressed* when the same, carcinogen-exposed rats are fed diets of either 5% animal protein or more than 20% plant protein (Dunaif & Campbell, 1987; Youngman & Campbell, 1992). This intriguing finding seems to imply that eating animal proteins may *contribute* to cancer development, while eating plant-based proteins may *protect against* cancer development. In order to understand more fully the impact that dietary changes may have on cancer recovery, future studies may wish to: 1) recruit cancer patients who are willing to forego allopathic treatments for a short time in order to make major changes to their diet and exercise regimen; and, 2) compare the tumor markers of such subjects to a control group of matched cancer patients who do not change their diet and who receive allopathic treatments only.

The sixth and final treatment that emerged frequently for both SR and Healer subjects in the present study was a physical treatment entitled, “Taking herbs or vitamins.” This code was applied whenever a subject discussed taking supplements, usually in pill or tea form, in addition to food. Just as there was a range of dietary changes proposed in the present study, there was also a range of supplements suggested by subjects; however, in general subjects described their supplements as either immune-boosting or toxin-clearing. This finding is supported by clinical studies that have shown that certain common herbs increase immune markers and suppress tumor growth (Cassileth & Deng, 2004; Craig, 1999). However, the majority of the herbs and over-the-counter vitamin supplements that cancer patients routinely use have *not* been tested in clinical trials (Cassileth & Deng, 2004), and some case reports have been published that cite toxic side effects of certain herbs for cancer patients (e.g., Baretta, Ghiotto, Marino, & Jirillo, 2009). Even

for those herbs which have been tested in clinical trials, such as mushroom compounds (Kidd, 2000), limitations in study design as well as inconsistencies in herb production quality have made their results less reliable (Sullivan, Smith, & Rowan, 2006). In contrast, one very large, prospective study (n=29,584) in China showed that beta carotene, vitamin E, and selenium supplements may protect against cancer (Blot et al., 1993). Therefore, similar, population-based trials in the U.S. are necessary in order to determine with more certainty the effects that immune-boosting vitamin and herbal supplements may have on cancer survival.

In addition to the six treatments listed above, which were common among both groups of subjects, three additional treatments were among the top ten most frequently cited treatments for SR Subjects, but were not among the top ten most frequently cited treatments for Healers. The first of these three was a mental/emotional treatment entitled, “Taking control of healing decisions,” and it was applied any time a subject described making his or her own decision about medical treatment – even if that meant going against his or her physician’s or family’s wishes. This observed behavior is slightly different from the well-studied ‘fighting spirit,’ which is “characterized by a determination to fight the illness and adopt an optimistic attitude” (Watson, Haviland, Greer, Davidson, & Bliss, 1999, p. 1332). In subtle contrast, this study’s finding of ‘taking control of healing decisions’ does not necessarily refer to “fighting” the illness, nor does it require an optimistic attitude. Rather, this study’s finding of ‘taking control of healing decisions’ refers to having the confidence to disagree with a physician or family/friend when needed. In this way, the finding relates in a more general sense to concepts such as ‘internal locus of control’ (Rotter, 1954), active versus passive coping (Lazarus, 1993), and the Manageability aspect of SOC theory (Antonovsky, 1987). In addition, this finding is in agreement with Huebscher (1993), who found a “Bucking the System” commonality among SR subjects, and with Schilder et al. (2004), who found an increase in personal autonomy among SR subjects. Future studies may wish to try to isolate and quantitatively measure the strength of this autonomous attitude via a psychometric scale, in order to investigate both its effect on cancer survival and its correlation with concepts such as SOC.

The second treatment that emerged in the top ten most frequently discussed codes for SR subjects, but not among the top ten most frequently discussed codes for Healers, was a mental/emotional treatment entitled, “Having an ‘I’m not going to die’ attitude.” This finding is consistent with Huebscher’s (1993) finding that SR subjects “decide on life,” and with Mehl-Madrona’s (2008) finding that SR subjects refuse to accept death as their immediate prognosis. As with the “Taking control of healing decisions” behavior, the “‘I’m not going to die’ attitude” is distinct from a “fighting spirit” coping style in that it does not necessarily refer to a fight against cancer; rather, it reflects a deep-seated and often calm belief that one is not going to die as predicted by physicians. In this sense, the present study’s finding may be more similar to the concept of ‘denial,’ at least to the extent that the SR subjects are denying – or, more accurately, rejecting – their allopathic prognosis. One longitudinal study has shown that moderate levels of denial lead to better physical health among lung cancer patients (Vos, Putter, van Houwelingen, & de Haes, 2010). Similar longitudinal studies that measure cancer patients’ level of acceptance/rejection of their prognosis, and the effect that that belief has on survival, are therefore warranted.

The third and final treatment that emerged among the top ten most frequently discussed Treatments for SR subjects, but not for Healers, was a mental/emotional treatment entitled, “Receiving social support.” This finding is supported by at least two other studies which have found that SR subjects experienced increased social support prior to their remission (Mehl-Madrona, 2008; Schilder, et al., 2004). Social support has been shown to affect physical health both indirectly (e.g., family members can help a person adhere to a complicated medication program (Bloom, 1990)) and directly (e.g., the hormone oxytocin is released after hugging another person, which reduces blood pressure (Ishak, Kahloon, & Fakhry, 2010)). One of the first studies to demonstrate a direct link between social support and physical health was Nerem et al.’s (1980) landmark animal study in which a treatment group of rabbits that was fed a high-cholesterol diet yet received daily petting and play sessions with other rats showed 60% *less* arterial blockage than a control group of rabbits that was fed the same, high-cholesterol diet, but did not receive any petting or play time.

In terms of cancer, another landmark study showed that supportive group therapy was associated with twice the survival time of metastatic breast cancer patients (n=86) (Spiegel, Bloom, Kraemer, & Gottheil, 1989). However, Goodwin et al. (2001) could not replicate those findings. Bloom (2008) argues that perhaps her landmark 1989 study has not been replicated because researchers are focusing on the impact that *psychotherapy* has on cancer survival, as opposed to the impact that *social support* (e.g., from the support group) has on survival. Indeed, since 1989, multiple studies have shown that social support is associated with increased survival time in cancer patients, even after controlling for other factors (Chou, Bloom, Wild, & Stewart, 2011; Kroenke et al., 2006; Reynolds et al., 1994; Waxler-Morrison et al., 1991; Weihsa et al., 2005). Due to this strong foundation of research, and due to the fact that social support also emerged as a treatment in the present study on SR, it is strongly suggested that SR researchers include social support as a variable when designing future studies.

In addition to the three treatments that were among the top ten most frequent treatments for SR subjects but not for Healers, two additional treatments were among the top ten most frequent treatments for Healers, but not for SR subjects. The first of these two treatments was an energetic treatment entitled, “Healing, unblocking, or infusing energy.” This code was applied whenever a subject described generating or receiving energy as way to help heal cancer. Subjects in the present study tended to describe ‘energy’ as a force that is present everywhere and in everything; this description is consistent with how the term energy is conceptualized in modern complementary medicine (Fazzino, Griffin, McNulty, & Fitzpatrick, 2010). The present study’s finding of energy healing as a cancer treatment is also consistent with some studies of SR subjects (Huebscher, 1993; Mehl-Madrona, 2008; Ventegodt, et al., 2004), although it is absent from at least one qualitative study on SR subjects (Schilder, et al., 2004). However, because the purpose of Schilder et al.’s (2004) study was to identify *psychological* shifts prior to remission, it is possible that the topic of energy healing simply was not addressed with subjects. Acupuncture was one of the energy healing modalities described by subjects in the present study; it is purported to unblock, drain, or infuse energy in the body via needle insertion (O’Regan & Filshie, 2010). In a review of randomized control trials, O’Regan & Filshie (2010) found acupuncture to be safe and clinically effective for the management of side effects related to allopathic cancer treatments. On the other hand, a review of energy healing clinical trials found that while modalities such as ‘Therapeutic Touch’ and ‘Reiki’ may have beneficial effects on

pain and physical health status, larger, double-blinded studies are needed before any firm conclusions can be drawn (Fazzino, et al., 2010). Therefore, until clinical trials are conducted that test whether these energy healing modalities are effective treatments for cancer itself, and not simply for the side effects of allopathic cancer treatment, it will remain unclear how and if these energy healing modalities affect cancer recovery.

The second treatment that was among the top ten most frequent treatments for Healers, but not for SR subjects, was a physical treatment entitled, “Strengthen or activate the immune system.” This particular code is not a treatment per se, but rather an explanation given by subjects for why a particular treatment (i.e., diet change) is able to heal cancer. This finding reflects the subjects’ underlying belief that the body’s immune system has the ability to remit even advanced cancer, as long as the immune system is adequately strong and/or active. This finding is consistent with allopathic medicine’s understanding that the body’s immune system, when activated, can remit cancer (Rosenberg, Yang, & Restifo, 2004). This finding is also consistent with other SR theorists who have proposed that SR results when the cancer patient’s immune system is strongly stimulated, such as by a fever (Niakan, 1998), a bacterial infection followed by antibiotic use (Fozza, et al., 2004; Maywald, et al., 2004), or a biopsy puncture (Heibel, et al., 2004). Despite the prevalence of such biological hypotheses in the SR literature, however, none of the 20 SR subjects in the present study reported having a fever, bacterial infection, antibiotics, or biopsy prior to their SR. Instead, many attributed their SR to supplements, treatments, and/or lifestyle changes that they believed enhanced their immune system. Future studies are warranted that investigate treatments which may stimulate a person’s immune system to the point where SR occurs.

Underlying beliefs.

As mentioned in the ‘Findings’ section above, the subjects in this study not only discussed specific treatments that they believed could bring about SR, but also discussed the underlying belief systems that guided them to choose those treatments. In fact, these belief systems were often discussed more than the individual treatments. The finding of underlying belief systems implies that there may be many different ways to achieve SR, and that these different ways may fall under one, two, and/or three larger paradigms of understanding. These three underlying belief systems, therefore, may provide the overarching guidance needed to understand why SR may occur, and to make major advances in the field of SR research.

Three related belief systems emerged from the present study; the first is the belief that, in order to remit cancer, one must change the underlying conditions which allow it to thrive. This belief represents a departure from the traditional, allopathic view of cancer, which sees cancer as cells that need to be killed and removed from the body, at which point a person waits to see if the treatment killed all of the cancer cells, or if some survived and the cancer may therefore grow back (National Cancer Institute, 2005). In contrast, the view that emerged in the present study sees cancer as a disease that only grows under very specific conditions; if those conditions are changed, the cancer cells will be unable to survive and will die off, and they will not re-grow as long as the new conditions persist. This view is consistent with Block’s (2009) view of cancer as a chronic illness that is best managed by establishing *and maintaining* optimal health conditions in the body. Block (2009) believes that these optimal conditions can be achieved and maintained through permanent changes in diet, supplements, exercise, and mental/spiritual practices, while

stronger allopathic cancer treatments can be used only when necessary (Block, 2009). In accordance with this new way of viewing cancer, the Block Center attempts to prevent cancer recurrence by monitoring frequently each patient's health status, and by using blood analysis and other laboratory tests to monitor his/her "unique molecular footprint." If minor deficiencies are detected in these tests, lifestyle and mental/spiritual changes are suggested first; if major deficiencies are detected, both lifestyle and allopathic treatments are recommended (Block, 2009). Future studies that investigate treatments aimed at changing the internal conditions of a cancer patient's body, either in conjunction with or separately from treatments that aim to kill individual cancer cells, are needed in order to verify this new theoretical paradigm.

Supplementing this first belief system – that is, the notion that one must change the underlying conditions that allow cancer to thrive – is a sub-belief entitled, "Each patient may have a unique change that he/she needs to make in order to remit his/her cancer." This tenet is similar to the recent movement in medicine called "Personalized Medicine," which supports the individualization of a patient's treatment plan depending on his/her particular biological, environmental, and psychological factors (Gonzalez-Angulo, Hennessy, & Mills, 2010). On the other hand, this study's findings sit in contrast to the traditional biological view that there is a single cause to every illness (Payne, 1983). However, even allopathic cancer researchers have found that there can be many causes of the genetic mutation that leads to cancer, such as a virus, bacteria, or carcinogen entering a cell and altering its DNA; inheriting a genetic flaw; or allowing the body to degenerate in such a way that a domino effect in the cells leads to genetic mutation (National Cancer Institute, 2005).

If we consider this sub-belief to be true – namely, that each cancer patient may have a unique change that he/she needs to make in order to remit his/her cancer – then we must also consider ending the search for a single, 'magic bullet' cause of SR. Rather, this new sub-belief asks us to consider that all of the hypotheses proposed thus far in the SR literature and in the findings from the present study – e.g., high fever, biopsy, transfusion, dietary change, psychological shift, spiritual experience, etc. – may be accurate causes of SR *if* each one represents the particular change that that patient needed to make in order to change the conditions that were allowing his/her cancer to thrive. Put another way, the traditional allopathic paradigm of disease would attempt to determine which one of the six most frequent treatments that emerged from the present study was the one that brought about the SR of all 20 subjects. However, the contrasting paradigm of health and illness that has emerged in this sub-belief would consider the possibility that all six of the most frequent treatments, if not more, may have played a role in bringing about SR. Therefore, the possibilities that 1) each cancer patient may have a unique change that he/she needs to make; and, 2) some patients may require a multi-treatment intervention while others may require only a single-treatment intervention, presents significant research challenges. If these two theoretical possibilities hold true, then the gold standard of medical research – that is, a randomized, double-blinded, controlled trial that isolates only one treatment at a time – may need to be adjusted, while comparative effectiveness studies may need to be encouraged.

The second underlying belief system that emerged from the present study is the belief that illness indicates a blockage somewhere in the body-mind-spirit system, while health indicates a state of unblocked movement. This belief is consistent with Eastern medical

traditions (Xutian, Zhang, & Louise, 2009) and with holistic medical traditions (Ventegodt, et al., 2004). This belief offers a way to characterize any treatment that may bring about SR in the sense that, if a treatment brings about movement in the human system, it can be viewed as health inducing. Therefore, movement-inducing therapies may include: eating foods that move easily through the digestive tract, exercising to move blood through the body, breathing deeply to move oxygen through the body, receiving acupuncture to move energy through the body, receiving a transfusion that moves new blood into the body, experiencing a fever which indicates that the body is trying to move a foreign agent (bacteria or virus) out of the body, or experiencing a biopsy puncture that moves a large number of immune cells to the site of a tumor. In other words, the belief that illness equals a blockage and health equals non-blockage/movement could represent the common thread among all of the SR treatments that emerged in the present study. This includes any mental/emotional or spiritual treatments that are movement inducing, as will be explained in the next underlying belief.

The third and final belief system that emerged in the present study is the belief that human beings have at least three aspects – spiritual, emotional/mental, and physical – and that these aspects affect one another and are connected by what is called ‘energy.’ More specifically, subjects described the ‘body’ as the physical body, the ‘mental/emotional’ aspect as that aspect of humans which thinks and feels emotion, and the spiritual aspect as that aspect of humans which is divine and unconditionally loving (note: the spiritual aspect was often described as the primary aspect of the body-mind-spirit system). This belief in a body-mind-spirit interaction is consistent with Eastern medical traditions (Chan, Ho, & Chow, 2001; Xutian, et al., 2009) and with other traditional healing systems around the globe (Helman, 2007; Pedersen & Baruffati, 1985). Some have argued that, before René Descartes’ separation of mind and body, the vast majority of world healing traditions considered the body, mind, and soul to be inextricably linked (Lagerlund, 2007). However, in reality, Descartes theorized that the body, mind, and soul *are connected* via the pineal gland (“the seat of the soul”), and that the soul/mind primarily controls the body, although the body can sometimes control the mind (e.g., when people act out of instinct) (Cottingham, Stoothoff, Murdoch, & Descartes, 1984). The theory that emerged from the present study suggests that rather than the mind *controlling* the body, as Descartes suggests, the mind and soul *interact* with the body in ways that can have tangible and lasting effects.

The first sub-belief that emerged under the spirit-mind-body belief is the specific belief that thoughts/emotions have tangible effects on the physical body. This was one of the most frequently appearing codes in the present study. The vast majority of SR subjects and Healers interviewed believe that habitual thoughts and emotional tendencies can either help or hinder physical health, depending on their content. One only has to look at the allopathic medical concept of the placebo effect to see that this sub-belief has a scientific basis. The word ‘placebo’ often carries negative connotations, because it implies that a drug works no better than one’s imagination. However, it could just as easily carry a positive connotation, because it implies that one’s thoughts are as equally powerful as drugs. One study that compared six of the most widely prescribed, FDA-approved anti-depressants from 1987-1999 found that 80% of their effectiveness had been duplicated in placebo control groups (Kirsch, Moore, Scoboria, & Nicholls, 2002). In other words, the placebo sugar pill was 80% as effective as the anti-depressant. The placebo response can also lead to negative effects, a phenomenon known as the “nocebo” effect (Hahn, 1997). One of the most famous nocebo effects observed with cancer

patients occurred when 40 out of 130 control cancer patients (30%), who were unknowingly receiving a placebo drip of saline instead of experimental chemotherapy, lost all of their hair (Fielding et al., 1983). In other words, their *belief* that they were receiving chemotherapy caused their hair to fall out. While a placebo response does not occur in all control subjects in all studies, the fact that it occurs at all indicates that thoughts/emotions can have a profound effect on the physical body.

Clinical results from the emerging field of psychoneuroimmunology (PNI) have added to the evidence that thoughts/emotions have a tangible effect on physical health. A landmark PNI study published in the *New England Journal of Medicine* showed that thoughts and feelings may depress the immune system (Cohen, Tyrrell, & Smith, 1991). In this study, physically healthy subjects took surveys regarding their stress levels and then received nasal drops that contained the common cold virus, after which they were quarantined. Even after controlling for other variables, those who scored higher on the stress surveys were more likely to develop a cold, while those who scored lower on the stress surveys were less likely to develop a cold (Cohen, et al., 1991). In other words, the mental/emotional feeling of stress seemed to create sub-optimal conditions in the person's immune system, thereby allowing the virus to take hold. In addition to this finding, another landmark study found that the same receptors that receive thought information in our brain are present in nearly every cell in the body (Pert, 1997); this finding provides a possible mechanism for how thoughts may affect the entire physical body. Meanwhile, studies from the emerging field of Epigenetics have shown that while genetic flaws – including ‘cancer’ genes – may be inevitably inherited, these flawed genes still need to be turned on (i.e., expressed), perhaps by an environmental cue or toxin, in order to have a negative effect on one's health (Lomberk, 2007). A recent epigenetic study showed that lifestyle changes (e.g., dietary change, stress management, exercise, and psychosocial support group) can turn off disease-promoting genes, including oncogenes (Ornish et al., 2008). Taken together, results from the fields of placebo research, PNI, and epigenetics provide considerable evidence for the sub-belief that emerged in this study, namely that thoughts affect the physical body.

A second sub-belief that emerged under the body-mind-spirit belief is the notion that energy is in everything – including in the body, mind, and spirit. Specifically, subjects described energy as something that vibrates at different frequencies depending on its function, such that the energy of the physical body vibrates at a lower frequency than energy on the mental/emotional level, which in turn vibrates at a lower frequency than energy on the spiritual level. Cancer was often described in the present study as vibrating at an unusually low level, which, if raised as a result of energy treatments, for instance, may go into remission. This belief in an all-pervasive energy provides a potential explanation for why spiritual or mental/emotional treatments may have effects on the physical body. While the medical literature is flush with theoretical articles that agree with this sub-belief (e.g., Gordon, 2006; Rindfleisch, 2010; Rosch, 2009), instrumentation limitations make verifying this energy theory exceedingly difficult (Sutherland, Ritenbaugh, Kiley, Vuckovic, & Elder, 2009). It is hoped that new instrumentation that can measure these purported energy levels will be developed soon, and that such instrumentation will allow for the meaningful testing of this theory, similar to how the development of the microscope allowed for the verification of germ theory.

A third and final sub-belief that emerged under the body-mind-spirit belief is the notion that there is a hierarchy of significance in which the spirit/soul is the primary aspect of human beings, followed by the mental/emotional aspect, followed by the physical body. Subjects from the present study who believe in this notion believe that all emotional and/or physical problems, including illness, stem from a root disconnection from the spirit/soul. As such, they believe that reconnecting fully to one's spiritual aspect will allow for the resolution of any mental/emotional or physical problems. Additional specifics of this particular theory are described in more depth in the 'Findings' section above. Many world religions agree with the belief that humans are, at their core, divine or made up of divine energy (Ellwood & Alles, 2007). While it is extremely difficult to design studies that could adequately assess this theory, documented cases of 'spiritual healings' (e.g., Benor, 2001; Wright, 2008; Zachariae et al., 2005) may provide potential examples of this theory in action.

Applicability to Other Diseases.

It remains unclear whether the causal theories collected for Research Question #1 may apply to diseases *other* than cancer. However, research on heart disease and HIV/AIDS tentatively indicates that some of the 'treatments' that emerged in the present study may indeed be applicable to those diseases. For example, Ornish et al.'s (1998) randomized control trial (n=48) showed that patients with moderate to severe coronary heart disease (CHD) who changed their diet to a 10% fat and vegetarian one, engaged in aerobic exercise, quit smoking (if applicable), and engaged in a psycho-social support group experienced a significant decrease in arterial plaque after one year, compared to a control group of CHD patients who received standard medical care only. In contrast, the control group experienced a significant *increase* in arterial plaque after one year (Ornish et al., 1998). The experimental group in this study went on to maintain their lifestyle changes for a period of five years, at which point they exhibited a continued decrease in arterial plaque, while the control subjects experienced a continued increase in plaque (Ornish et al., 1998). Perhaps most striking was that the control group experienced more than twice as many cardiac events during the five-year period than did the experimental group (Ornish et al., 1998). In relation to the present study on SR, although exercise and smoking cessation were not among the most frequent 'treatments' to emerge among SR subjects, diet change and psychological/social treatments were, thus tentatively suggesting that such treatments may be beneficial for both cancer and CHD patients.

Recently, Ornish and colleagues conducted a similar study that tested the effects of intensive lifestyle changes for CHD patients (n=47) over a much shorter time span – 12 weeks (Dod et al., 2010). In this study, the experimental group engaged in a diet change (10% fat, plant-based), moderate exercise (three hours/week), and daily stress management practice (one hour/day of yoga/meditation) (Dod et al., 2010). After only 12 weeks, the experimental group showed significant *increases* in flow-mediated dilatation (FMD, an indicator of heart health), while the matched control group showed significant *decreases* in FMD (Dod et al., 2010). Again, while exercise was not one of the most frequent 'treatments' to emerge in the present study on SR, diet change and aspects of stress management did emerge frequently, thereby implying that these two treatments may benefit both cancer and CHD patients.

Other CHD studies have looked specifically at the link between psychological factors and survival. For example, one meta-analysis of 37 studies showed that psycho-educational

programs (health education and stress management) were associated with a 34% reduction in cardiac mortality and a 29% reduction in heart attacks ($p < .025$) (Dusseldorp, van Elderen, Maes, Meulman, & Kraaij, 1999). While ‘health education’ did not emerge as a frequent finding in the present study on SR, aspects of stress management did, thereby tentatively suggesting that stress management techniques may be beneficial to both cancer and CHD patients. A similar prospective study ($n=1,306$) showed that, over the course of 10 years, men who had initially scored highly on an optimism scale were significantly less likely to experience heart attacks or cardiac deaths than men who initially scored highly on a pessimism scale (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001). This finding directly relates to three of the present study’s causal theories for SR: 1) Releasing negative emotions (e.g., pessimism); 2) Increasing positive emotions (e.g., optimism); and, 3) Having an ‘I’m not going to die’ attitude (an optimistic viewpoint).

Finally, a 12-year prospective study on cardio-respiratory fitness (CRF), psychological well-being, and mortality ($n=4,888$) showed that a low level of negative emotions independently predicts long-term survival in men and women (Ortega et al., 2010). In addition, this study showed that initially having both low levels of negative emotions *and* high levels of cardio-respiratory fitness created a strong combination effect for survival, such that those individuals had a 63% lower risk of premature death than individuals who had initially high levels of negative emotion and low levels of CRF (Ortega et al., 2010). Again, this finding relates to the present study’s finding in which SR subjects attributed their remission, at least in part, to a reduction in negative emotions; therefore, these similar results tentatively suggest that a reduction in negative emotions could be beneficial to both cancer and CHD patients.

In terms of HIV research, a recent review of randomized control trials concluded that psychological interventions which successfully decreased negative affect and increased positive affect were more likely to improve immune function among HIV-positive persons (Carrico & Antoni, 2008). This finding directly relates to the findings from the present study on SR, in which SR subjects attributed both a decrease in negative emotions and an increase in positive emotions, at least in part, to their remission. In a different HIV study ($n=279$), Ironson et al. (2002) found that long-term AIDS survivors scored significantly higher on spirituality scales than did a comparison group of HIV-positive persons; similarly, the present study found that SR subjects frequently attributed their remission, at least in part, to a deepening of spirituality. Taken together, these similar findings very tentatively suggest that deepening one’s spirituality may possibly benefit the physical health of both cancer and HIV-positive patients. Finally, a study that reviewed the effects of vitamin supplementation on HIV-positive patients concluded that “multivitamin supplementation reduces the rate of HIV disease progression among patients in the early stage of disease” (Mehta & Fawzi, 2007, p. 355). This finding relates to the present study’s finding in that SR subjects frequently attributed their remission, at least in part, to herbal/vitamin supplementation.

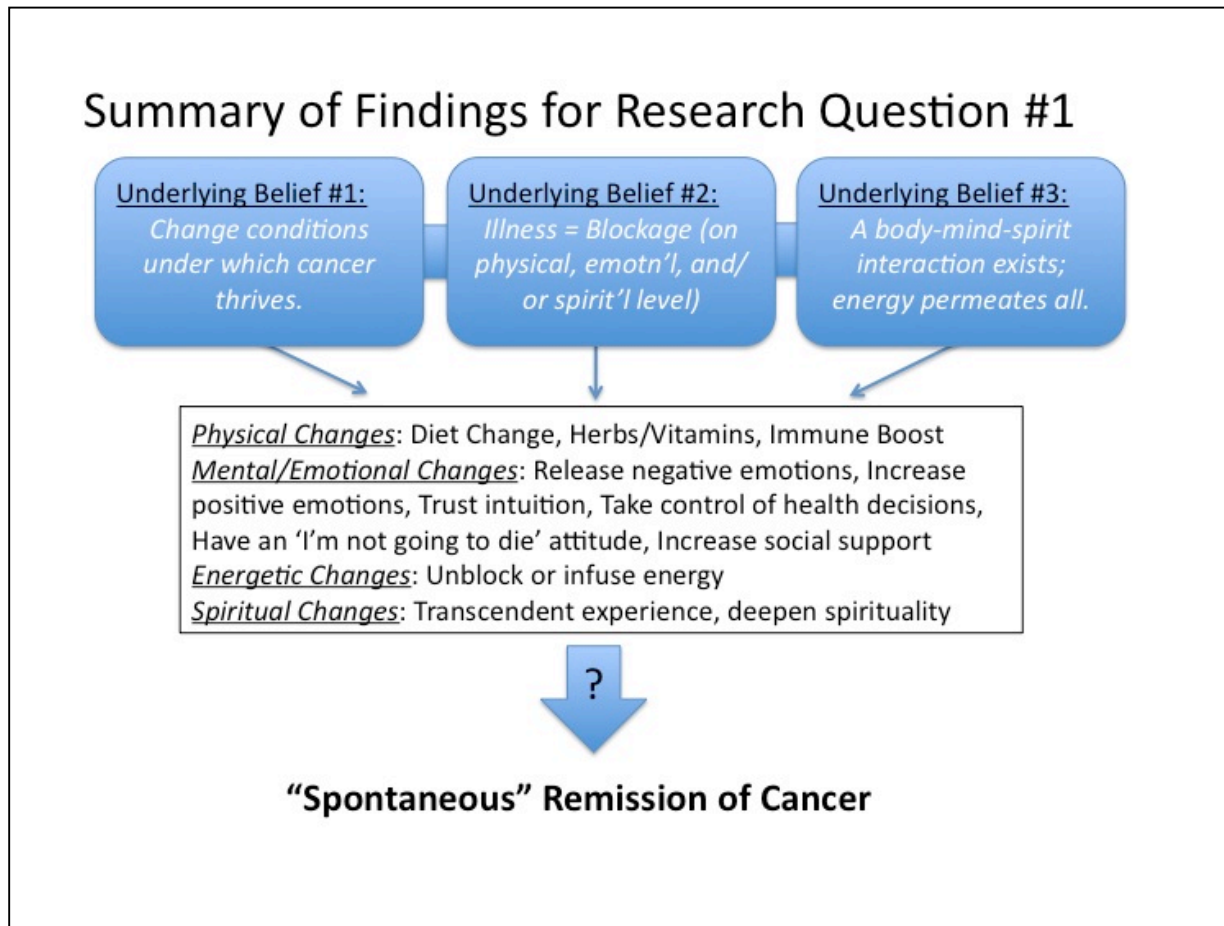
In summary, results from CHD and HIV research seem to overlap somewhat with the results from the present on SR, especially with regard to diet change, increase in positive emotions, decrease in negative emotions, having an ‘I’m not going to die’ attitude, deepening of one’s spirituality, and taking herbal/vitamin supplements. It is also possible that the other frequent findings from the present study (e.g., trusting in intuition regarding health decisions,

increasing social support, or taking control of health decisions) may also have salutary effects for other illnesses. Therefore, while the present study restricted its sample to cancer survivors only, future researchers may wish to investigate whether the treatments that emerged in the present study – many of which have also emerged in CHD and HIV studies – may actually be healthful treatments for a wide variety of diseases and conditions.

Research Question #1 Summary.

When the findings for Research Question #1 (“What may cause SR?”) are combined into a single narrative, they coalesce as follows: “Spontaneous Remission may occur when cancer patients change the underlying conditions (usually blockages) in their body-mind-spirit system that are allowing their cancer to thrive; such changes may include a combination of physical changes (e.g., diet change, herb/vitamin supplementation, or immune system activation), mental/emotional changes (e.g., releasing negative emotions, increasing positive emotions, using intuition to help make health decisions, taking control of health decision-making, having an ‘I’m not going to die’ attitude, or increasing social support), energetic changes (e.g., unblocking energetic blocks), and/or spiritual changes (e.g., deepening one’s spiritual connection, or having a transcendent experience).” This narrative summary is depicted visually in Figure 1.

Figure 1. Summary of Findings for Research Question #1



Research Question #2

While the first research question in this study sought to collect a wide range of causal theories for why SR may occur, the second research question in this study sought to investigate one particular causal theory for SR, namely that SR may emerge due to a high Sense of Coherence (SOC). Because SOC has been previously associated with good physical health in numerous other studies (see Eriksson & Lindstrom, 2006), the healthy and cancer-free SR subjects in this study were hypothesized to score highly on the SOC measure. The mean SOC of the 17 scale respondents in this study was 73.4 (SD 12.5), out of a possible 91. Although Antonovsky (1987) did not specify what he theorized to be a strong, moderate, or weak SOC, other authors have created such categories and would characterize a mean of 73.4 as either strong (Gottlieb, 1998; Harri, 1998; Ibrahim, Scott, Cole, Shannon, & Eyles, 2001) or highly moderate (Hedov, Anneren, & Wikblad, 2002; Mendel, Bergenius, & Langius, 2001). Furthermore, as Table 4 suggests, when cautiously compared with U.S. employees (Mackie, et al., 2001), the general population of Canada (Wolff & Ratner, 1999), unhealthy U.S. citizens (Callahan & Pincus, 1995), and healthy women (Motzer et al., 2003), the 17 SR subjects from the present study tentatively appear to score higher on SOC.

However, Table 4 also tentatively suggests that there does *not* appear to be a significant difference in SOC between the 17 SR subjects from this study and either the 160 non-SR cancer survivors or the 160 “exceptional” cancer survivors from Gotay et al.'s (2004) study. As was mentioned previously in the “Methods” section, Gotay et al. (2004) defined “exceptional” cancer survivors as “patients who had survived for at least five years post diagnosis, but [who], for their given site and stage [at diagnosis], had less than a 25% actuarial probability of living for five or more years” (p. 883). Again, it is important to remember that Gotay et al.'s (2004) “exceptional” cancer survivors are not necessarily SR subjects, because the Hawaiian Tumor Registry (from which the study obtained its data) does not contain enough information to determine whether or not these “exceptional” survivors achieved remission because of allopathic treatment only, alternative treatment only, or a combination of the two.

In terms of SOC, Gotay et al.'s (2004) 160 “exceptional” survivors scored a mean SOC of 76.1, while the 160 matched, non-exceptional cancer survivors scored a mean SOC of 77.5; these two scores were not significantly different from one another in Gotay et al.'s (2004) analysis. In comparison, the present study's 17 SR subjects who completed the SOC-13 scale scored a mean of 73.4. Interestingly, all three of these groups of cancer survivors – the present study's SR subjects, Gotay et al.'s (2004) “exceptional” cancer survivors, and Gotay et al.'s (2004) standard cancer survivors – scored higher on SOC than samples from other studies that included both healthy and non-healthy populations. This cautious observation could tentatively imply one of two things – either that overcoming a physical illness such as cancer may lead a person to experience an increase in SOC, or that an initially strong SOC may be an asset that helps a person to overcome an illness such as cancer. To help answer this question, a longitudinal study is warranted that tests cancer patients' SOC before diagnosis, at the time of diagnosis, at the time of treatment, and at the time of remission or hospice entry.

In addition, these cautious comparisons from Table 4 also tentatively suggest that SR subjects may *not* have a stronger SOC than cancer survivors who used allopathic medicine

(Gotay, et al., 2004), an observation that tentatively implies that it may *not* be a strong SOC alone that causes SR. Instead, this observation tentatively suggests that a strong SOC may be an important factor in *any* cancer remission, whether it occurs due to SR or due to allopathic treatment.

Finally, it is also interesting to note that many of the qualitative findings from this study appear to be consistent with the ‘Sense of Coherence’ (SOC) theory. SOC theory posits that people who are physically healthy consistently find their life circumstances to be Comprehensible, Manageable, and Meaningful (Antonovsky, 1987). In terms of Comprehensibility, many of the SR Subjects in this study appeared to comprehend how they were going to return to health (e.g., by changing the conditions under which their cancer was thriving, by unblocking any blockages, and/or by taking advantage of the body-mind-spirit interaction). Furthermore, their comprehension of their situation was encapsulated by their, “I’m not going to die” attitude. In terms of Manageability, SR subjects in this study expressed the belief that they had sufficient resources to heal from cancer by: 1) Taking charge of their health decisions; 2) Trusting in the specific resource of their intuition; and, 3) Increasing the resource of social support. Furthermore, although diet change and herb/vitamin supplementation do not necessarily fall within the SOC theory, they do represent two resources that SR Subjects in this study utilized in order to manage their health challenge. Finally, in terms of the Meaningfulness component of the SOC theory, SR Subjects in the present study appeared to find meaning in their situation by deepening their spirituality, releasing negative emotions, and increasing positive emotions.

To summarize, while the quantitative results of this study are too tentative to determine whether or not a strong SOC causes or at least plays a role in SR, the qualitative results appear to be very much in concordance with SOC theory. Therefore, a longitudinal, prospective study is warranted which compares the SOC of three, large, randomized samples: 1) SR cancer survivors (i.e., people who experience a cancer remission *without* allopathic medicine); 2) non-SR cancer survivors (i.e., people who experience a cancer remission *with* allopathic medicine); and, 3) the general population. Finally, researchers may also wish to study whether there is any association between the strength of SR subjects’ SOC and the amount of time they have remained in remission. The various SOC studies recommended above are necessary before any conclusions can be drawn regarding the impact that SOC may have on cancer remission in general, or on Spontaneous Remission in particular.

Limitations

There are a number of limitations in the present study. First, because the majority of this study was qualitative in nature and involved purposive sampling, the findings are not meant to be generalized to a larger population, such as to all cancer patients or to all persons who have experienced SR. Rather, the goal of this study was to collect a wide range of causal theories for SR in order to provide guidance for the design of future research that can lead to comparative effectiveness studies, the results of which can be generalized to a larger population. The eleven most frequent ‘Treatments for cancer’ as well as the three ‘Underlying beliefs’ about health which emerged from this study constitute a wide range of potential causative agents of SR, which may now be tested in laboratory or field research studies. Until they are, however, only suggestive associations should be drawn from this study’s findings, not causal conclusions. An

additional reason why the results of this study should not be generalized lies in the fact that the SR subjects interviewed in the present study may differ substantially from the larger population of all persons who have experienced SR; for example, the voluntary aspect of participating in this study may have favored the recruitment of SR subjects who are especially extroverted, socially-oriented, and/or pro-active.

Second, because snowballing recruitment strategies were employed in this study (an appropriate strategy given the rarity of the subject matter), the findings undoubtedly do not represent the widest range of causal theories for SR currently in existence. In addition, this study's purposeful decision to collect mostly non-allopathic causal theories for SR (because allopathic medicine has not yet been able to explain it), further narrowed the range of theories collected. Therefore, future studies may wish to employ a broader and more systematic sampling strategy that seeks out more allopathic theories in order to collect the widest range of causal theories possible.

Third, due to resource constraints, this study was conducted by only one researcher, which increased the risk of bias. However, because the same researcher coded all transcripts, the bias was reliable across all subjects. Attempts to decrease this bias included debriefing regularly with peers/advisors and having an independent reviewer code ten randomly selected transcripts (see 'Analytic Strategy' in the 'Methods' section). Nevertheless, this study would have benefited from having multiple researchers from various backgrounds both conduct the interviews and code/analyze the transcripts.

Fourth, this study was retrospective in design; therefore, it is possible that some subjects remembered events incorrectly or forgot events entirely. Future studies should consider a longitudinal design which interviews and/or surveys cancer patients at various points in their healing process, so as to avoid retrospective inaccuracies. Similarly, subjects may have consciously or unconsciously adjusted their responses in an attempt to please the interviewer, a phenomenon known as 'Demand Characteristics.' Also, there is the possibility that subjects may have underreported behaviors that they considered to be socially undesirable (e.g., drinking alcohol, using illegal drugs), and overemphasized behaviors that they considered to be socially desirable (e.g., eating vegetables, reducing stress). Finally, subjects' responses may have been influenced by any assumptions or stereotypes that they may have had regarding the interviewer's age, race, socioeconomic status, beliefs about healing, etc.

Fifth, this study relied on self-reported data, which means there is a chance that subjects could have provided inaccurate responses. However, the risk of misrepresentation was deemed to be quite low due to the following factors: 1) Subjects were not compensated for their participation; 2) Confidentiality and anonymity were absolutely assured; and 3) Rapport was established between the interviewer and interviewee. On a related note, some physicians believe that many SR cases are actually misdiagnoses, such that the patient never truly had cancer (Charlton, 1997; Stefanczyk-Sapieha & Fainsinger, 2008). These claims are often made by physicians who are entrenched in the notion that it is impossible to remit advanced cancer without using allopathic methods. Nevertheless, there have been some cases of SR in which subsequent histological evidence has shown that a misdiagnosis did occur. To address this possibility, Phase II subjects in the present study were given the option of permitting the Lead

Investigator to contact their diagnosing oncologist to verify verbally their original malignant diagnosis. However, permission rates were low for this step; therefore, future studies may wish to make this step mandatory, and may wish to collect visual verification (e.g., medical records) in addition to verbal verification.

Finally, this study achieved a good response rate (85%) for the Phase II SOC scale; nevertheless, with such a small sample size ($n_2=20$), the non-response of three individuals has the potential to have a significant impact on mean SOC score, because any sample size under 40 is typically considered to have an unstable mean (Moore & McCabe, 2002). Furthermore, the small number of SOC scale respondents ($n=17$) prevented statistical analysis and comparison of SOC scores, and instead only allowed for cautious comparisons. Therefore, future studies investigating the SOC of SR subjects should use a sample size that is 40 or larger.

Implications

Theoretical implications.

The findings from the present study offer many theoretical implications for SR. Perhaps most pertinent is the implication that research on SR in particular, and on health/illness in general, should consider mental/emotional and spiritual factors as well as physical ones, especially when researching survival. Furthermore, because one's health is influenced by one's socio-economic surroundings, culture, and social support, these factors should also be considered when investigating physical health. While much of allopathic medicine has embraced the bio-psycho-social model as presented by Engel (1977), cancer survival research is still predominated by biological research only. The results of the present study suggest that cancer survival researchers should consider mental/emotional and spiritual impacts on survival, as well as biological ones. One benefit of expanding the range of potential cancer treatments to include mental/emotional and spiritual ones is that it provides cancer patients with treatments that they may implement on their own, perhaps after minimal instruction. In contrast, allopathic medical treatments must be obtained through pharmaceutical companies and physicians.

The findings from the present study also imply that health and illness should be viewed as conditional states that are constantly affected by one's actions, thoughts, and emotions. This includes cancer, which is theoretically presented in this study as an illness that only thrives under certain conditions. This theory is in agreement with Antonovsky's (1987) Salutogenesis framework, which proposes that a person is constantly moving back and forth along a continuum of health, with health/ease at one end and sickness/dis-ease at the other. Such a continuum contrasts with the dichotomous, allopathic view which sees people as either healthy or sick (Cassell, 1979). Adopting a conditional view of health and illness further suggests ending the search for a quick, 'magic bullet' treatment for cancer that, once taken, would fully resolve the disease. As an alternative, this study suggests that cancer patients may need to make and maintain permanent changes in their thoughts, emotions, behaviors and/or lifestyle in order to remove permanently the conditions that allowed the illness to develop in the first place. One benefit of this conditional theory of health is that it implies that cancer will not recur as long as one does not revert back to the former conditions.

Finally, the findings from the present study strongly suggest that healing is never truly spontaneous; instead, the findings imply that healing occurs when a necessary change occurs. The term ‘Spontaneous’ Remission implies that the remission had no cause and occurred completely by chance. The results from this study, from other qualitative studies on SR, and from the vast majority of SR case reports in the medical literature (many of which propose biological causes), indicate that it is highly unlikely that these remissions are truly spontaneous. In addition, it is misleading to call an event ‘spontaneous’ merely because its cause is yet unknown. Therefore, it is strongly recommended that the term “Spontaneous Remission” be changed to “Non-allopathic Remission” (NAR). Furthermore, based on the results of this study, it is recommended that the wording of the definition of SR be changed. The current definition defines SR as a disappearance of cancer that occurs “...without medical treatment, or with treatment that is considered inadequate to produce the resulting disappearance of disease symptoms or tumor” (O’Regan, 1995, p. 2). According to many of the SR subjects interviewed in the present study, however, the non-allopathic treatments that they engaged in adequately explained the resulting regression, at least in their opinion. In other words, although these treatments may not yet be clinically proven to remit cancer, the subjects nonetheless found the treatments to be more than adequate. Therefore, it is recommended that, in addition to changing the name of SR to Non-allopathic Remission (NAR), the definition should also be changed to the following:

“Non-allopathic remission (NAR) is the complete or partial, temporary or permanent disappearance of a malignant tumor, non-tumorous malignancy, or metastasis that occurs 1) in the absence of any allopathic treatment (surgery, chemotherapy, radiation, etc.) or 2) after such allopathic treatment has failed to remit the disease, and 3) in the presence of non-allopathic treatments or changes, whether they be physical, mental/emotional, energetic, or spiritual.”

Research implications.

Specific suggestions for future research studies were described earlier in this ‘Discussion’ section, under the headings ‘Treatments’ and ‘Underlying belief systems.’ In general, however, there is a need for safety trials, which would test the safety of the ‘Treatments’ that emerged from this study on healthy control subjects. There is also a need for psycho-neuro-immunological (PNI) mediation trials, which would investigate the mediating factors (e.g., immune cell function, hormone level change) of the ‘Treatments’ that emerged in this study, so as to better understand exactly how these treatments may affect physical health. Eventually, it is hoped that such safety and mediation studies would lead to the design of a randomized, longitudinal clinical trial that aims to test the effectiveness of one (or more) of the treatments that emerged in this study. The design of such a trial would require the recruitment of cancer patients who are willing to forego standard allopathic treatment in order to try non-allopathic treatments, or for whom allopathic cancer treatment has stopped working. Such recruitment may prove difficult because it is unknown how many cancer patients would volunteer to forego allopathic cancer treatment. Then, this treatment group would need to be compared to a control group of cancer patients who receive standard allopathic treatment only.

To improve chances of recruitment for such a study, it is recommended that the trial be short-term; if the non-allopathic treatment group’s tumor markers do not improve during that short time, the subjects could be encouraged to leave the study and begin allopathic treatment

immediately. This type of study design may be more ethical for stage IV cancer patients who have tried allopathic medicine to its fullest, but still not achieved remission. The National Cancer Registry could be a potential source of such stage IV subjects.

In addition to moving toward the goal of designing studies that aim to isolate and test possible causes of SR, researchers may also want to consider designing studies that test one or more of the treatments that emerged in this study *in conjunction with* standard allopathic cancer treatment. Such a trial would compare a group of cancer patients receiving only standard cancer treatment to a group of cancer patients receiving both standard treatment *and* one or more of the treatments that emerged in this study. Similar trials have been conducted in the field of coronary heart disease (e.g., Ornish et al., 1998). Even though such a trial would not be able to assess what may cause a cancer remission in the absence of allopathic medicine (i.e., SR), it still would be able to assess which treatments from this study may increase the chances of cancer remission.

Regardless of how future studies are designed, it is clear that in order for the field of SR research to achieve its goal of understanding the way(s) in which cancer remits, researchers must go beyond the submission of individual case reports and move toward systematic research studies that can test the hypothesized causes of SR.

An additional recommendation for the field of SR research would be to create an online, international database of all SR cases, to which physicians and SR subjects could quickly report and compare potential SR cases. Other researchers have called for such a database, although one has not yet been created. As evidenced by the fact that all 20 SR subjects in the present study represent unpublished SR cases that were found through word of mouth, and not from published academic case studies, an unknown number of SR cases go unpublished each year. Other SR researchers have also observed such underreporting (Kappauf, 2006; Papac, 1996; Schilder, et al., 2004). This under-reporting may occur because: 1) physicians do not have the time and/or expertise to write and submit an article for publication; 2) journals do not select SR articles for publication due to the rarity of the topic; or, 3) SR subjects may have stopped allopathic treatment, in which case their oncologist would remain unaware of the SR. The recommended international database of potential SR cases would also greatly benefit from a ranking system in which the manager of the registry could rank cases based on level of documentation and on duration of remission. For example, if cases in the SR registry were ranked from 1 to 5, a “5” ranking could represent a case of permanent SR with full pre- and post- documentation, while a “1” ranking could represent a case of temporary SR with minimal documentation. Such an international, online database and ranking system would provide SR researchers with the broadest possible range of SR cases to investigate, and would greatly improve the incidence estimations of SR.

Practice implications.

The present study does not offer direct implications for practice because its purpose was to generate causal theories only. Therefore, its findings are not meant to be applied to practice until the theories generated from this study can be tested in systematic research studies.

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Appendix A: Introductory Emails

SAMPLE Email/Letter to Potential Phase I Subjects (Healers)

Dear Dr. XXXXXX,

My name is Kelly Turner and I am conducting dissertation research at the University of California at Berkeley on the Spontaneous Remission of cancer. In your article entitled, "XXXXXXX," you described a patient who experienced Spontaneous Remission.

I am writing to ask if you would be willing to participate in a brief phone interview as part of my dissertation research. The goal of the exploratory study is to generate multiple hypotheses for why Spontaneous Remission occurs. If you participate, your name will be kept anonymous (see www.xxxxxx.berkeley.edu for details about the study). I would greatly appreciate even 5 minutes of your time to hear your thoughts. Would you be willing to speak briefly over the phone at a time of your choosing?

Thanks in advance for any time you can spare,
Kelly Turner

SAMPLE Email/Letter to Potential Phase II Subjects (SR subjects)

Dear Ms. XXXXXX,

I read your blog entry about your experience with cancer and how you experienced a sudden remission, and was wondering if you would be willing to participate in a brief phone interview as part of my dissertation research.

My name is Kelly Turner and I am conducting dissertation research at the University of California at Berkeley on the Spontaneous Remission of cancer. The goal of my study is to generate multiple hypotheses for why Spontaneous Remission occurs. If you participate, your name will be kept anonymous (see www.xxxxxx.berkeley.edu for details about the study).

I really think your healing experience would be an important contribution to this study. Would you be willing to speak briefly over the phone at a time of your choosing?

Thanks in advance for any time you can spare,
Kelly Turner

Appendix B: Close-Ended Questions for Phase II Subjects

BRIEF QUESTIONS FOR THOSE WHO HAVE EXPERIENCED SR (p. 1 of 4)

A. Psychosocial Information

Circle

1. Did you experience a significant change in **thoughts or emotions** prior to the SR?
If yes, please describe this change briefly:

Y N

2. Did you experience a significant change in **spiritual beliefs** prior to the SR?
If yes, please describe this change briefly:

Y N

3. Did you experience a significant change in your **ability to cope** with cancer prior to the SR?
If yes, please describe this change briefly:

Y N

4. Did you experience a significant change in daily **living conditions** prior to the SR?
If yes, please describe this change briefly:

Y N

5. Did any **major life events**, either positive or negative, occur prior to the SR?
If yes, please describe this change briefly:

Y N

6. Did you experience **any other** mental/emotional/spiritual/social change prior to SR?
If yes, please describe this change briefly:

Y N

Appendix B: Close-Ended Questions for Phase II Subjects (p. 2 of 4)

B. Biological Information

1. Did you experience any of the following immediately prior to the SR? (Check all that apply)

Biopsy
Describe: _____

Surgery
Describe: _____

Viral Infection
Name of the virus, if known: _____

Bacterial infection
Name of the bacteria, if known (e.g., 'strep throat'): _____

Fever
Maximum temperature reached, if known: _____

Blood transfusion
List the reason you received the transfusion, if known: _____

Hemorrhage (i.e., significant blood loss)
Describe what caused the blood loss: _____

Something else that may have caused a tumor to receive significantly less blood
Describe: _____

Hormonal change (please explain what caused the hormonal change):
 Hormonal pills or injections
Which kind(s)?: _____
 Pregnancy
When did the pregnancy occur in relation to the SR?: _____
 Menopause
When did menopause occur in relation to the SR?: _____
 Thyroid removal
Why was thyroid removed?: _____
 Other cause
Describe: _____

Vaccination for a non-cancer illness
For which illness(es)? _____

Cancer Vaccination
Describe: _____

2. Did you experience a significant change in your **diet/nutrition** prior to the SR? Y N
If so, please describe this change briefly:

3. Did you experience a significant change in your **medical treatment** prior to the SR? Y N
If so, please describe this change briefly:

4. Did you experience any other **change related to your body** prior to the SR? Y N
If so, please describe this change briefly:

Appendix B: Close-Ended Questions for Phase II Subjects (pg. 3 of 4)

C. Demographic Information

Type of cancer you had

Stage of cancer at diagnosis

Stage of cancer at time of
SR _____

Was your cancer metastatic? (if so, describe)

Number of months/years between diagnosis and SR?

If applicable, # of months/years between SR and recurrence? _____

Gender _____

Date of Birth _____

Age at Diagnosis _____

Age at Spontaneous Remission _____

Ethnicity (**optional**) _____

Socio-economic status (**optional**) (check one):

- _____ \$0 - \$30,000 annual family income
- _____ \$30,000 - \$60,000 annual family income
- _____ \$60,000 - \$90,000 annual family income
- _____ \$90,000 - \$120,000 annual family income
- _____ \$120,000 - \$150,000 annual family income
- _____ \$150,000 - above annual family income

Education level (**optional**) (check highest level reached):

- _____ Elementary (8th grade)
- _____ High School or GED
- _____ Associate's Degree
- _____ Bachelor's Degree
- _____ Master's Degree
- _____ Professional Degree (MD, JD, etc.)
- _____ Ph.D.

Appendix B: Close-Ended Questions for Phase II Subjects (pg. 4 of 4) - SOC-13 Scale

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. Do you have the feeling that you don't really care about what goes on around you?	1	2	3	4	5	6	7
	<i>Very seldom or never</i>						<i>Very often</i>
2. Has it happened in the past that you were surprised by the behavior of people you thought you knew well?	1	2	3	4	5	6	7
	<i>Never happened</i>						<i>Always happened</i>
3. Has it happened that people whom you counted on disappointed you?	1	2	3	4	5	6	7
	<i>Never happened</i>						<i>Always happened</i>
4. Until now your life has had:	1	2	3	4	5	6	7
	<i>No clear goals or purpose at all</i>						<i>Very clear goals and purpose</i>
5. Do you have the feeling that you're being treated unfairly?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>
6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>
7. Doing the things you do every day is:	1	2	3	4	5	6	7
	<i>A source of deep pleasure and satisfaction</i>						<i>A source of pain and boredom</i>
8. Do you have very mixed-up feelings and ideas?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>
9. Does it happen that you have feelings inside you would rather not feel?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>
10. Many people – even those with a strong character – sometimes feel like losers in certain situations. How often have you felt this way in the past?	1	2	3	4	5	6	7
	<i>Never</i>						<i>Very often</i>
11. When something happened, have you generally found that:	1	2	3	4	5	6	7
	<i>You overestimated or under-estimated its importance</i>						<i>You saw things in the right proportion</i>
12. How often do you have the feeling that there's little meaning in the things you do in your daily life?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>
13. How often do you have feelings that you're not sure you can keep under control?	1	2	3	4	5	6	7
	<i>Very often</i>						<i>Very seldom or never</i>

Appendix C: Interview Guides for Phase I & Phase II Subjects

The following Interview Guide was used for Phase I subjects:

- 1) In your opinion, what is health and how can a person remain healthy?
- 2) In your opinion, what is illness and how can it come about?
- 3) In your opinion, what is cancer and how can it come about?
- 4) In your opinion, how should cancer be treated?
- 5) In your opinion, how might an advanced case of cancer go away quite suddenly?
- 6) (If time allows): Do you have any thoughts about what may cause cancer?

The following Interview Guide was used for Phase II subjects:

- 1) In your opinion, why do you think you healed from cancer? (elicit healing story)
- 2) [Ask remaining questions about any unmentioned variables (e.g. diet, psychological shifts, medical treatments, etc.)]
- 3) Do you have any thoughts about what may have caused your cancer, or about what causes cancer in general?

Appendix D: SOC Metric Results from the SOC-13 Scale

	SOC-13 score
SR Subject #1	68
SR Subject #2	81
SR Subject #3	80
SR Subject #4	67
SR Subject #5	54
SR Subject #6	82
SR Subject #8	89
SR Subject #10	59
SR Subject #12	56
SR Subject #13	72
SR Subject #14	71
SR Subject #15	84
SR Subject #16	83
SR Subject #17	84
SR Subject #18	57
SR Subject #19	79
SR Subject #20	82
<hr/>	
Median	79
Mean	73.4
Quartile 1	63
Quartile 3	82.5
Inter-quartile range	19.5
Range in this sample	54-89
Possible score range	7-91

