

Neda Nickzad

nn2068@nyu.edu

The Quandary of Cancer of the Brain

As a child I always knew I wanted to help people and change the world. Inquisitive, compassionate, and the love for cultures directed me on a path of traveling to all corners of the world. Designing homes and creating lifestyles became my forte. But in the midst of it all, on a beautiful spring day, going through my childhood relics, I stumbled on an exquisitely untouched set of watercolors I was given to back in boarding school for achieving excellent marks in mathematics. I, there and then, felt connected to who I truly was. Design had allowed me to express my feelings but now it also included painting. This new outlet guided me through the ups and downs of life, but ultimately, it was the passion for art that shaped me into the woman I am today. My travels developed my identity as an artist. These days I follow my heart and help children cope with cancer through art therapy. My experiences have prepared me to influence many communities via expression. Now I clearly see how my love for people, cultures, and my passion for art might beautifully come together. The great Persian poet, Rumi, once said, “Let beauty of what you love be what you do.”

Art has the power to heal, restore, uplift, and encourage in the physical, spiritual, and emotional realms. Art can heal the hearts of the terminally ill, causing them to find hope and courage, even in the face of adversity and to engage and strive to live the short time they have in a meaningful way. Cancer patients at the end of life need to reflect and transcend in an ideal setting, a healthy landscape, preferably in nature. Being diagnosed with a brain tumor a few years ago (thankfully benign), made me reflect and question many things. Ultimately it was the healing power of art that helped me cope with surgery and post-surgery. It helped me keep my sanity. Curiously, my art transformed into an ever more complex and finely polished scenes, often hinting at legends and tales, and frequently symbolism. Art enabled me to experience mystical and spiritual experiences.

Imagine having to wait and anticipate death with only memories and belongings in a city full of toxins in the air surrounding your home. Brain cancer patients must live by and spend their end of life and breathe Tehran's toxic air pollution every day. The link between brain cancer and carcinogens and exhaust is down played, but air pollution causes horrible problems with disastrous results. In the capital of Iran, Tehran's 14 million inhabitants are exposed to a myriad of harmful environmental hazards that have caused many problems, particularly the rising statistics of terminal brain cancer. But together we could minimize the suffering from harmful pollution with a comprehensive and holistic plan to include art therapy at its core, situated in the beautiful vast forests and agricultural lands in the north of Iran. This paper will examine brain cancer patients and assess their awareness, values, and needs as it relates to environmental hazards in air pollution in the city of Tehran.

"Love is in the air but the air is highly polluted." Amit Abraham

Amit Abraham's quote romanticizes the question of why clean air matters. The kind of love he talks about is not the kind that once it breaks your heart it pollutes the air, it is the kind of love that air pollution is making difficult to see in the air, blocking it from entering our lives. Air pollution is having the last laugh, it has polluted our lives and now our love. Where there is pollution there is no love, only disease and death. Thus, the enemy of love is to hatefully breathe in polluted air.

It had been over twenty five years since my last visit to Tehran and I was anxious to observe what had changed and how my image of the city cultivated abroad contrasted from the reality on the ground. The city was blanketed with smog and schools were closed for almost a week. It was the aftermath of the 2009 elections and a thick air of fear complemented the thick pollution. I spent three weeks in Iran, mostly in Tehran, talking with friends and acquaintances in academia and business circles, driving around the city, unearthing as deep as I could, to fully grasp of what I was exploring. It was winter, and air pollution was annoying and a source of illness visible among the population. As reported on the radio, the situation was worse than usual due to prolonged lack of precipitation. Everyone longed for the hike in fuel prices to rein in the

pollution in the coming months. Talking to families, each person had a story to tell about a family member, a close friend, a friend of a friend, afflicted by diseases caused by pollution. Everyone blamed the government for their support of the auto industry, which builds substandard cars, based on discontinued models from Korea and France. It is commonly known that air pollution in Tehran and other large cities in Iran is due to the lack of catalytic converters used in these cars. Based on government statistics, several thousand of Tehran residents died in the month I was there due to extreme air pollution. The following photos should speak for themselves:



Tehran on a clean day



Tehran most days

In this research study of 10 patients with terminal brain cancer at the Tehran Cancer Institute, conducted in 2016, I aim to examine associations between long-term exposure to ambient air pollution and the risk of developing brain cancer. Although, I may not be able to prove brain cancers are caused by air pollution, it is however one of the variables as well as asthma, various cancers, and other health complications.

Iran continues its push for independence, oblivious to the international sanctions over its nuclear program. The country remains under the watchful eye as it abstains from all nuclear ambitions. But unfortunately this has come at a cost of degrading its air, water, land, and the health of its people. Sanctions are political weapons aimed to isolate and punish the intended country's economy, demanding it to change its policies. But in the interim the intended country may be forced to adopt alternative and survivalist methods to escape the claws of sanctions at the cost of

environment and health. In regards to Iran, sanctions have heightened a thirst for rapid development to increase water-resources infrastructure, generate its own power, and meet the needs of its people. With voracious domestic politics, Iran has ably evaded the sanctions to a degree, while disregarding the environmental and health impacts. One example is altering petrochemical factories into oil refineries. In July 2010, President Barack Obama introduced penalties on foreign entities for selling petrol to Iran. The country responded by developing, refining, and producing what is today the major cause of its toxic and deadly air pollution.

“Reports suggest that Iran’s petrol contains ten times the level of contaminants of imported petrol and its diesel 800 times the international standard of sulphur.” (Baker, 2014) Therefore, Iran’s environment has been significantly damaged by policies that have neglected the anthropogenic consequences of aggressive development in a time when environmental preservation is deemed a non-priority under the constraints caused by sanctions. In addition, the United States has victoriously restricted and blocked environmental financial aid from the United National Program and the Global Environment Facility. These majorly known international institutions should in theory aid developing countries in improving life without restrictions.

Iran’s environmental crisis has not been ignored by the international community. The World Health Organization has rated four of Iran’s cities including Tehran among the top ten most polluted cities in the world. Their high air pollution has been attributed to substandard petrol. Daily, Iranians inhale a concoction of rubber particles, asbestos, sulphur dioxide, nitrogen oxide, carbon monoxide, and partially burnt remnants of hydrocarbons. In parallel, cancer and respiratory diseases which are the second and third highest causes of death in Iran, are increasing. Close to 70,000 people are diagnosed with cancer each year, a number that is likely to increase by 90% by 2020, according to the Cancer Research Center of Iran. (Torre, et al. 2012)

The environmental risks of cancer, generally brain cancer, either malignant or nonmalignant, have detrimental consequences. Although many possible causes have been and are being studied, researchers are still not certain exactly what causes brain cancer. Risk factors can be environmental, such as being exposed to various chemicals at home, work and outside, eating or not eating certain foods, physical activity level, and/or other lifestyle choices such as tobacco and/or alcohol use. They can also be genetic, or based on characteristics we inherit from our

parents. (Connelly, 2007) Of many factors studied and considered, the exposure to ionizing radiation – has clearly shown to increase the risk of developing tumors. It is important to note that it can be difficult to accurately measure environmental exposure, which means that results across studies can be inconsistent.

Over the past decade or so, “it has become evident that the free radical gas nitric oxide (NO) acts as a novel transcellular messenger molecule in many key physiological and pathological processes.” These oxides can harm DNA; unrepaired DNA damage could overtime contribute to brain cancer development. Carbon monoxide is a silent killer. It has no smell, no taste, and no sound, and neither people nor animals can tell when they are breathing it, but it can be fatal and long-term exposure causes brain damage leading to brain tumors. Sulfur oxide gas sources are metal extractions, trains using sulfur based fuels. Sulfur oxides inhalation can damage respiratory functions and elicit a variety of detrimental effects on the brain. Burnt remnants of hydrocarbons mixed hydrocarbons contains benzene. (Lichter, 2014) There have been suggestions that exposure to acrylonitrile, formaldehyde, polycyclic aromatic hydrocarbons (PAH) or vinyl chloride maybe risk factors for brain cancer. Airborne mixed hydrocarbons can be absorbed through the eyes, and that will cause brain cancer. Moreover, some research has shown a link between asbestos exposure in the workplace and gastrointestinal, colorectal, brain, bladder, kidney and laryngeal cancers. (Nordqvist, 2016)

Sources of air pollution – Indoor and Outdoor

Air pollution is a combination of various substances and the exact contents fluctuate depending on what sources of pollution are in proximity, your location, the time of year, and the weather. “Sources of air pollution can be man-made, such as fumes from vehicles and smoke from burning fuels. While others, such as North African desert dust and radon gas, are natural. Air pollution is often divided into outdoor air pollution and indoor air pollution.” (Cancer Research UK, 2016)

Tehran is located in a valley encircled with high mountains which wrap around the city. The issue rises due to the population of close to 16 million residing and working in a radius of 492 sq.

miles, with a concentration of 9 million in 280 sq. miles daily. More than 80% of the pollution is caused by cars and motorcycles. In addition, noise pollution and stress are enormous problems. There are many plans to fight pollution but no sign of implementation exists. Renewable energy is in nascent stages and bleak. There are plans to bring awareness about the hazards of air pollution to the public but that as well is *just* a plan.

The air in Tehran is a dull orange haze that blurs the mighty Alborz Mountains that ring the immensely populated metropolis. The facades of the city's buildings, a collage of cement and white marble, are entirely covered with a thick layer of gray dust and grime. In the busy city center, people are often seen wearing facemasks, or women clutching veils across their faces. In this smog, simply to blink burns and stings the eyes while taking a breath burns the throat. And some mornings, when the air is especially bad, the sidewalks are hauntingly empty. But the gridlocked traffic of more than three million cars emitting toxic exhaust, continue their routine grind.

When I ask how the pollution in the country came to be this dire, many Iranians point fingers at the U.S. and its trade sanctions that has nipped the means to the country's required gasoline imports. The sanctions, they say, have pushed Iran to use outdated technology; producing a toxic mix of cheap petroleum in order keep the country's more than 21 million cars from running on empty. As I talk to experts and academics they say the problem is questionable, and the blame must be shared. They argue that the sanctions, though quite problematic, simply took the lid off of inflamed issues that had been building up for many decades, caused by extreme population increase, flaw in management and conduct, and rampant corruption.

The air pollution crisis is now omnipresent. It's the single worst problem people in the city have to deal with, every day, and the single most important topic to complain about. During extreme periods, schools are cancelled; the sick and elderly are advised not to leave their homes; and the population is banned from driving their cars on specific days of the week. And people are dying from what they inhale. In 2013, the Health Ministry announced that up to 4,460 Tehran residents died due to air pollution, equivalent to roughly 25 percent of the total number of deaths in the city each year. (Halimi et al., 2016)

Controversy over the city's growing air pollution dilemma have escalated, and there have even been debates of relocating the capital partly to get away from the fatal pollution. "In 2013, a parliamentary proposal to choose another capital city received 110 votes from the 214 Chamber-members present for the vote; supporters of the change cited the pollution, debilitating traffic jams and high earthquake risks." Such a move would be astonishingly costly, so it's inconceivable to take place, but the fact that it is being critically contemplated is evidence that most Iranians have certainly realized they are in the center of an environmental catastrophe. (Ghorayshi, 2014)

The lethal fuel

It's always easy to blame someone else, and in this case the blame for the deadly orange haze is the United States. On July 1, 2010, President Obama signed an amendment to the 1996 Iran Sanctions Act that imposed penalties on foreign entities for selling refined gasoline to the country. The sanctions were a response to the country's growing nuclear program; the White House hoped they would force then-president Mahmoud Ahmadinejad to stop the country's nuclear programs.

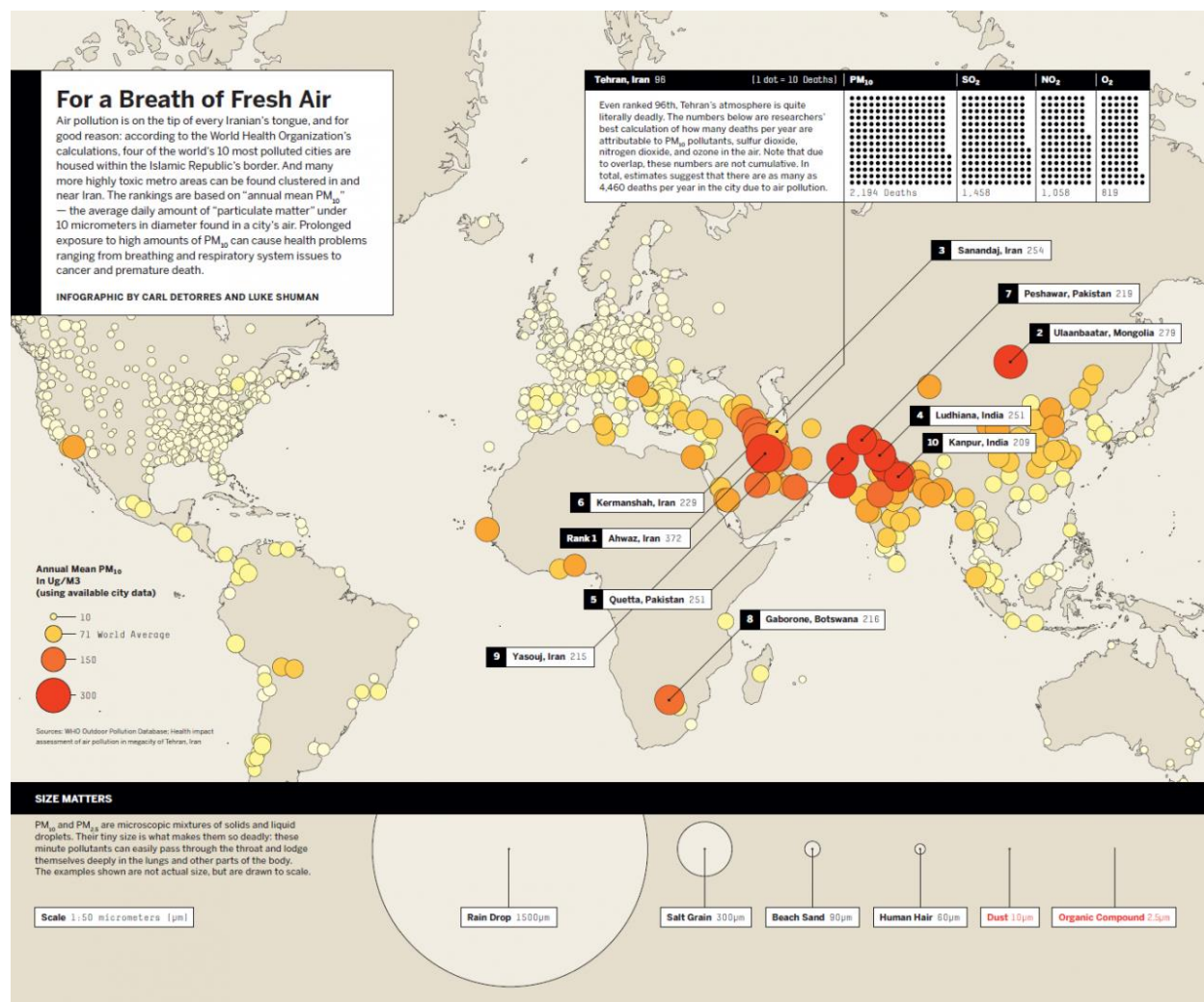
At the time, limiting the import of gasoline was viewed as the best way to put pressure on Iran. "Despite its thriving exports of crude oil, in 2010 Iran was dependent on imports for roughly 40 percent of its gasoline. It was the sixth biggest importer of fuel in the world, just behind the U.S. The new sanctions restricted the sale of gasoline to Iran, as well as any equipment or services that would aid the country in developing its own refining processes." (Congressional Record, 2009)

At first, Ahmadinejad disregarded the sanctions as "futile," challenging that, "within a week we will reach the phase of self-sufficiency in producing petrol. But shortly after the new sanctions were signed, gasoline imports to Iran dropped from roughly 120,000 barrels a day to 30,000 barrels a day. Iran suddenly realized it was wheezing for gas." (Vira et al., 2011) The following narrative briefly touches on the state of petrol at the start of sanctions:

I remember, at exactly the time of sanctions took effect, Hossein, a friend of the family was working in a petrochemical company which made goods out of crude oil. He confided that the sanctions brought the production of a very dangerous new mix of gasoline. He told me the list of alternatives to imported gasoline is very short and there is no time. Iran has very limited number of oil refineries and the government was trying to figure out how to produce more gasoline with no outside aid. So, they decided to increase the gasoline's octane by mixing in benzene. Benzene, he told me, is an offshoot from refining process that is commonly known for being great at burning fuel; but it is extremely toxic and deadly. He warned me, "Benzene with gasoline is a dangerous mixture."

According to the Energy Information Administration (EIA) classification of contamination, Tehran is one of the ten most polluted cities in the world as well as Mexico City, Cairo, Shanghai, Jakarta, and Bangkok. Also, about 4-5 thousand of Tehran citizens die annually to air pollution. According to Iranian Green Association, approximately 2 million vehicles travel and about 7 million liters of petrol is burnt daily in Tehran. (Kim et al., 2012)

In 2012, Kazem Naddafi et al. performed a study on mortality rates in Tehran. Researchers used the information compiled from the city's 25 air pollution monitoring stations, and implemented an approach proposed by the World Health Organization, using the AirQ 2.2.3 software developed by WHO, and made his best assessment of how many lives could have been saved if Tehran's air met the accepted international standards of health. (Naddafi et al., 2012) "His study showed the excess of 2,194 total mortality out of 4,728 in one year occurred as a result of exposure to PM10, a class of particles smaller than 10 microns in diameter produced as a byproduct of car emissions. PM10 particles are dangerous precisely because their small size allows them to travel deeper into the lungs than particles found in nature." According to a 2011 report by WHO, Tehran made the list of cities with these particles, the prime contributor to the high rate of cancer. There is simply no way to avoid the bad air. In Tehran, the number of healthy days are highly rare and the worst days are deadly. (WHO, 2011)



The consequence and cost of clean air

Protecting the environment is declared in Article 50 of Iran's constitution: "The preservation of the environment, in which the present as well as the future generations have a right to flourishing social existence, is regarded as a public duty in the Islamic republic. Economic and other activities that inevitably involve pollution of the environment or cause irreparable damage to it are therefore forbidden. (Iran Human Rights Documentation Center) But in reality the issue remains to interpretation, as experts believe, the years of governments' lack of attention to environmental issues have created a decayed and extremely hazardous urban landscape. These issues go back decades prior to the sanctions. "The issue of air pollution was first addressed in

the Statute for Preventing Air Pollution in July 1975. After the 1979 Islamic Revolution and during the Iran-Iraq War of 1980-1988, the issue was not taken seriously, as it was overshadowed by arguably more pressing priorities.” (Pargoo, 2016)

Iran has knowingly disregarded the issue of environmental protection in favor of short-term profits and political stability. The government has built bigger developments with massive infrastructure without considering the environment. Also, “Tehran’s air pollution is partly due to geographical factors: “The Iranian capital is semi-enclosed by high altitude mountains in three directions, blocking air circulation. Tehran makes up a quarter of the Iranian economy. Its population increased from 1.8 million in 1956 to more than 8 million in 2011, where it has roughly stayed. Meanwhile, the number of cars in Iran increased from 1.2 million in 1979 to 17 million in 2014, of which 7 million are roaming the streets of Tehran.” (Pargoo, 2016) The majority of these cars are domestically manufactured, with many of them failing to meet international environmental standards. Adding to this, the sanctions during the past decade have crippled the country’s technological advances in the auto industry and negatively affected fuel quality, among other issues. In sum, the matter of air pollution is a complex problem that is hard to address. Hence, it is no surprise that despite all efforts to reduce pollution in Tehran, the Iranian capital still suffers from this problem.

Without a doubt, politics are a major contributor in the problem of air pollution. The organizations responsible for taking on the issue are not coordinated and managed under a higher body with superseding control, while the Iranian capital suffers from the effects of centralized management, there are various government bodies — including the Environmental Protection Organization, the Oil Ministry and the Ministry of Industry, Mines and Trade — that make decisions that directly impact air quality. There are also other players and competitors; for instance, the authority for traffic lies with the police, which is under the control of the supreme leader.” (Pargoo, 2016) Lethal air pollution has been dumped on Iran over decades of mismanagement and lack of governmental transparency. But it seems a cultural shift may be taking place at last: There are even plans under way for a national hybrid car and public transportation projects.

Health complications from air pollution

Both indoor and outdoor ambient air significantly cause health problems around the world. Various types of infections, allergens, irritants and chemical toxins in urban outdoor environments can reduce the quality of life and cause numerous diseases. Inhaled air pollution is guided at the nose, throat and lungs, allowing unsafe pollutants to enter the body and ultimately risk exposure to all tissues.

Air pollution, a well-known urban issue, poisoning people, has become a global problem. Humans' tolerance for environmental destruction is nothing new as history is rife with civilizations that failed because of the exploitation of natural resources. But, humans tend to adapt easily to deteriorating environmental conditions and will continue steadfastly with their daily course of life even when air pollution is severe, traffic is heavily congested, and water and food supplies are at risk. The following photo shows the extent of pollution people deal with on bad days especially the police:



According to a study findings by Yale and Columbia University researchers who created the Environmental Performance Index, a biennial ranking of how well countries protect the health of their populations and ecosystems: “The EPI reported that 3.5 billion people, half of humankind,

live in areas where air pollution exceeds the safe level designated by the World Health Organization. Air pollution has gotten worse and more people are dying from air pollution.” (Spector, 2016)

Fine-particulate air pollution is notorious in causing cardiovascular and lung disease, raising the risk of heart attacks and a heart-related death. Researchers at Harvard School of Public Health compared changes in air pollution from 1980 to 2000 with residents’ life expectancies, they concluded that a reduction in air pollutants in 51 U.S. cities between 1980 and 2000 added an average of five months to life expectancy. Residents in cities that made the most significant improvements in air quality, such as Pittsburgh, PA, lived almost 10 months longer. For every microgram per cubic meter decrease in fine-particulate air pollution, life expectancies rose by more than seven months. (Pope III et al., 20019)

Air pollution is linked to increased hospital admissions for cardiovascular diseases with a rise in acute morbidity and mortality. “D’Ippoliti, et al conducted a study on 6531 patients in Rome who were hospitalized for acute myocardial infarction from January 1995 to June 1997. Air pollution data were taken from 5 city monitors. Positive associations were found for total suspended particulates, NO₂ and CO.” The strongest and most consistent effect was found for total suspended particulates. Increases in fine particulate matter air pollution increase the risk for myocardial infarctions, strokes, and heart failure. (D’Ippoliti et al., 2003)

Von Klot et al. conducted a multicenter study involving 22,006 survivors of a first myocardial infarction in European cities. “Air concentrations of nitrogen dioxide, carbon monoxide, ozone, and particles (PM₁₀) were measured: 6655 cardiac readmissions were observed. Cardiac readmissions increased in association with same-day concentrations of PM₁₀.” Effects of similar strength were observed for carbon monoxide, nitrogen dioxide and ozone, they concluded that air pollution is associated with increased risk of hospital cardiac readmissions of myocardial infarction survivors in 5 European cities. (Von Klot et al., 2005)

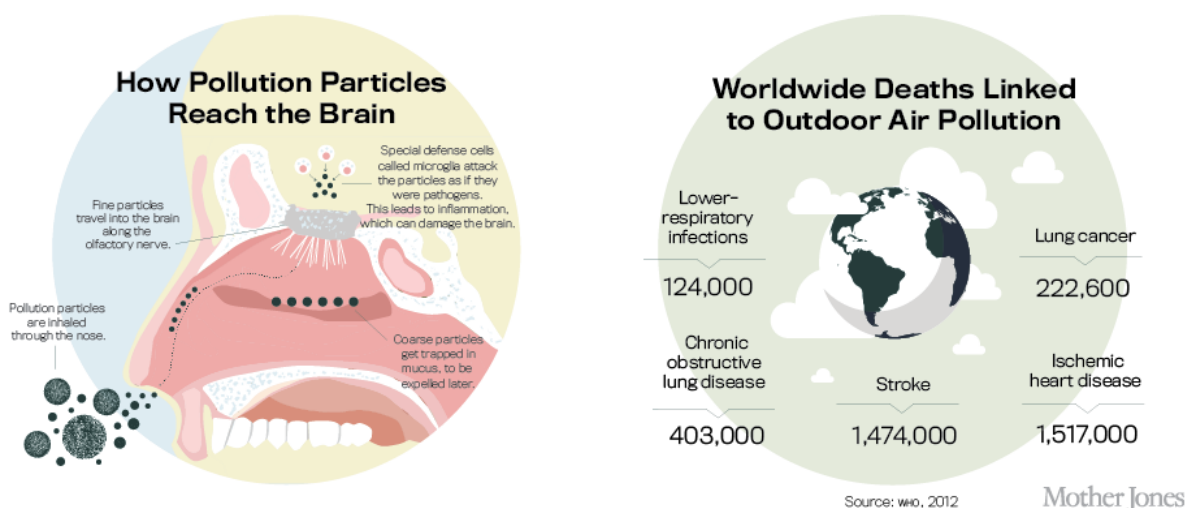
Simkhovich et al. confirmed that epidemiologic studies show that increased levels of air pollutants are positively associated with cardiovascular morbidity and mortality. They stated: “Inhalation of air pollutants affects heart rate, heart rate variability, blood pressure, vascular tone,

blood coagulability, and the progression of atherosclerosis. Major mechanisms of inhalation-mediated cardiovascular toxicity include activation of pro-inflammatory pathways and generation of reactive oxygen species.” Although most studies focus on the influence of systemic effects, recent studies indicate that ultrafine particles may be translocated into the circulation and directly transported to the vasculature and heart where they can induce cardiac arrhythmias and decrease cardiac contractility and coronary flow. (Simkhovich et al., 2008)

It is known that airborne chemicals contaminate food and water. Airborne chemical ingestion collects in the nose and throat and then swallowed mostly in mucus that aims to protect exposed surfaces. Airborne chemicals infiltrate the digestive system with common toxins such as pesticides, organophosphate, PCBs, dioxin, arsenic, cadmium, lead, and mercury. Also, occupational exposures to airborne bacteria can be severe and can cause cancer.

Air pollution and brain cancer

Air pollution negatively impacts pulmonary, cardiovascular, and central nervous system. Although its influence on brain cancer is unclear, toxic pollutants can cause blood-brain barrier disruption, enabling them to reach the brain and cause alterations leading to tumor development. In summary, exposure to air particle matter (PM) leads to distinct changes in rodent behavior expression similar to these observed in human brain tumors. Cancer is the health endpoint influenced by a multitude of factors, including genetic history, individual behavior, and environmental insults.

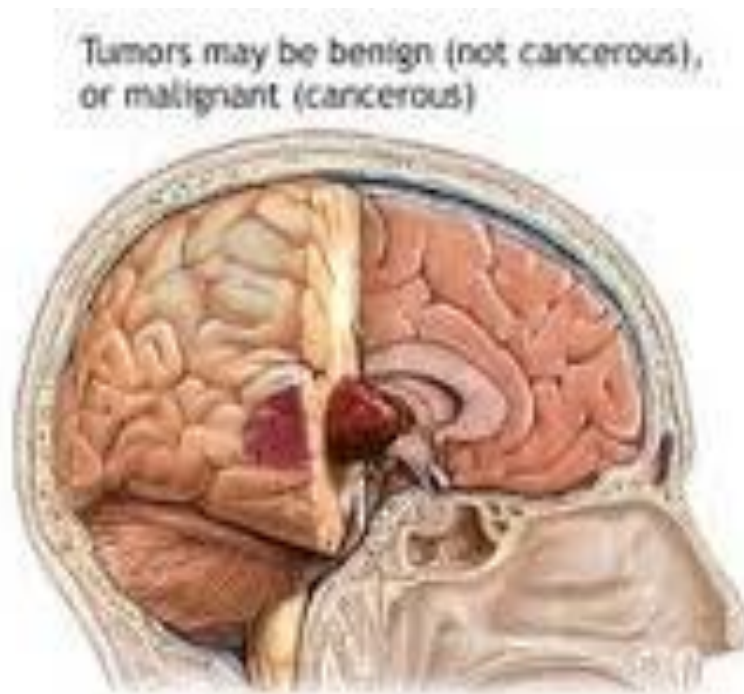


About brain cancer

Cancer arises through an extremely complicated web of multiple causes, and we will likely never know the full range of agents or combination of agents. We do know that preventing exposure to individual carcinogens prevents disease. There are many different factors that affect the susceptibility to cancer such as family history, occupation, living conditions, and socioeconomic status. Cancer is a broad term that refers to a range of complex diseases affecting various organs in the human body. Brain cancer is the leading cause of cancer death in children under the age of 20, and the third leading cause of death in young adults ages 20-39. In addition to the pain and suffering caused by the disease, cancer places an enormous economic burden on society.

There are 120 types of brain tumors, all with their own characteristics and behaviors. Based on GLOBOCAN estimates, “About 14.1 million new cancer cases and 8.2 million deaths occurred in 2012 worldwide. Over the years, the burden has shifted to less developed countries, which currently account for about 57% of cases and 65% of cancer deaths worldwide.” (Torre, 2015) Some tumors are benign (noncancerous). Non-cancerous tumors can usually be removed and are not likely to recur. Other tumors are malignant (cancerous). These tumors interfere with vital functions and are life threatening. Cancerous brain tumors usually grow rapidly, crowding and

invading tissue. Primary brain tumors (gliomas) start in the brain and affect the central nervous system. They can be noncancerous or cancerous. Secondary brain tumors, which are 10 times more common, are cancers that originated elsewhere in the body and have metastasized (spread) to the brain. Secondary tumors are about 3 times more common than primary tumors of the brain. (Salehi, 2012)

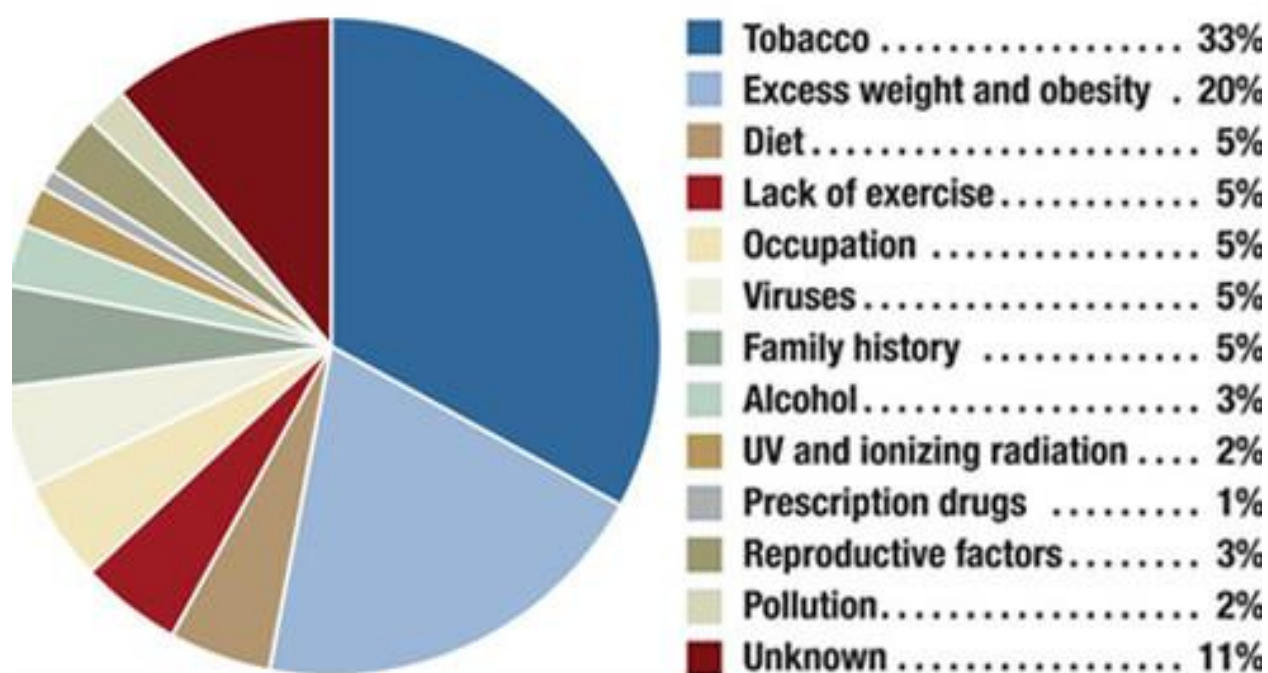


In May of 2010, the American President's cancer panel reported to President Obama that "the true burden of environmentally induced cancers has been grossly underestimated." Exposure to environmental carcinogens (chemicals or substances that can lead to the development of cancer) can occur in the workplace and in the home, as well as through consumer products, medical treatments, and lifestyle choices. It has been long known that exposure to high levels of certain chemicals, such as those in some occupational stings, can cause cancer. There is now growing scientific evidence that exposure to lower levels of chemicals in the environment is contributing to society's cancer burden. (CHEJ, 2015)

Environmental factors including tobacco smoke, nutrition, physical activity, and exposure to environmental carcinogens are estimated to be responsible for 80% of cancer diagnosis and death

worldwide. About 6% of cancer deaths per year are directly linked to occupational and environmental exposures to known, specific carcinogens. “The potential of environmental carcinogens to interact with genetic and lifestyle factors, as well as with each other, in the development of cancer, is not well understood.” Nor are chemicals in the environment exhaustively tested as to their carcinogenicity. Therefore the cancer burden caused by exposures to environmental carcinogens may even be larger. (Connelly, 2007)

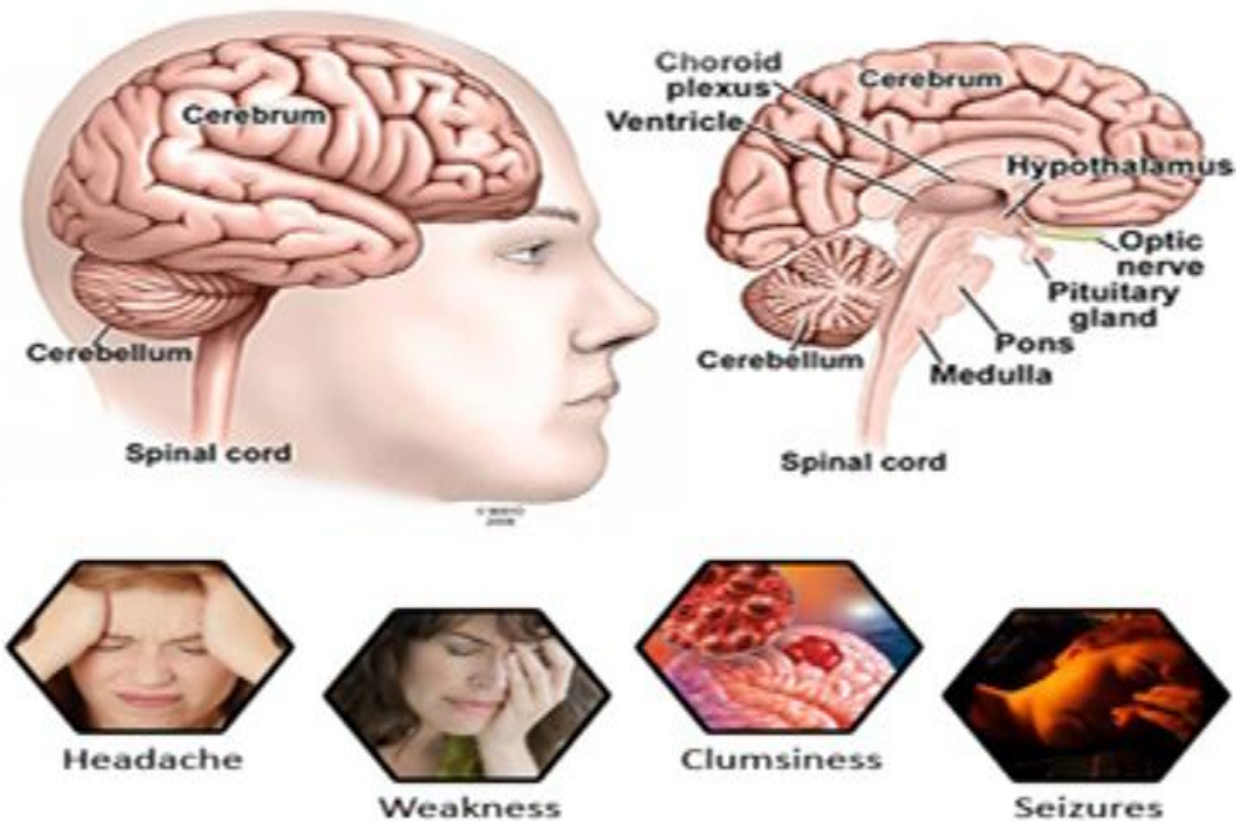
Estimated Percentage of Cancer Cases Caused by Identifiable and/or Potentially Preventable Factors



American Association for Cancer Research (AACR) Cancer Progress Report 2012

Not all brain tumors cause symptoms, and some such as tumors of the pituitary gland, some of which cause no symptoms are found mainly after death, with the death not caused by the brain tumor. “The symptoms of brain tumors are numerous and not specific to brain tumors, meaning they can be caused by many other illnesses. Many people have no awareness that they have brain cancer. They only know for sure what is causing the symptoms is to undergo diagnostic testing.” Early symptoms may not occur; if they do, they occur for the following reasons: The symptom are caused by the tumor pressing on or encroaching on other parts of the brain from functioning normally, some symptoms are caused by swelling in the brain primarily caused by the tumor or its surrounding inflammation, and lastly, the symptoms of primary and metastatic brain cancers are similar in men, women, and children. (American Cancer society, 2014)

BRAIN CANCER SYMPTOMS



Health complications from brain cancer

The common symptoms and warning signs of brain cancer include: headache, muscle weakness, Paresthesia, clumsiness, difficulty walking, and seizures. Moreover, other nonspecific brain cancer symptoms and signs include: altered mental status, nausea, vomiting, and abnormalities in vision, difficulty with speech, and gradual changes in intellectual or emotional capacity and personality changes. In many cases, a seizure is the first sign of a brain tumor, and what leads to its diagnosis. Some people have just one seizure, while others have reoccurring ones, a condition called epilepsy. Seizures are sudden, convulsive attacks that are caused by a burst of electrical impulses in the brain. It lasts only a short period of time and many cause unusual movements, a change in the level or loss of consciousness, and /or sensory distortions. (Blumenthal, 2008) I was diagnosed with meningioma, a benign brain tumor after experiencing many seizures. Believe me when I say they are quite traumatic. The following narrative depicts what I went through:

Not sure how much time had lapsed. I found myself in a hospital bed in London. It had to be a bad dream, my fiancé at my bedside excited to see me, explained what happened. “I went into a seizure,” he said. Gradually, events unfolded in my memory. “Do you remember anything?” he asked. I did remember, I was looking at myself in the mirror while Tomas was cutting my hair. I had been waiting for this appointment for months. Tomas is a famous hair stylist and to get an appointment entails clout and many pounds sterling. Oh no, how embarrassing I thought. The last thing I remember was the sound of music becoming deeper, and felt a sense of trembling in my entire body, a feeling of cold wind blowing against my skin, sweating, a metallic taste in my mouth, a sense of impending death; and then everything went black.

This was my second episode. A few months back, while driving on the highway in Dubai, I felt lightheaded, and a sudden visual distortion. Luckily the highway was not busy and I managed to pullover. There was nothing but desert as far as eyes could see. In the distance, a mirage of a construction site with laborers working in the heat of the afternoon. I heard heavy warping sounds coming from the engine of the car, as though

it was breathing. I wondered if I was having a heart attack. In those few moments I asked myself many questions, and if I was dying then it wasn't so bad. I felt a jolt of electricity shot from my feet to the top of my head. Unable to move my arm or leg, I managed with great effort to unlock the door in case they found my body and needed to pull me out of the car. I wanted to have the chance to say good bye to my mom. Then it all went black. I woke up feeling dizzy, weak and confused. I wasn't sure how long had passed. This feeling cannot be fully understood unless you have an episode. I managed with weak legs and fatigue to drive myself to the first medic. At the American hospital, I dropped myself on the first empty bed in the emergency room. After many checking my vitals and gallons of blood samples, they dismissed me. I was diagnosed with dehydration. I never knew dehydration felt like a heart attack. But in my case, ignorance was bliss. It was more comfortable not to know certain things.

The American hospital in Dubai failed to diagnose a tumor in my brain. With feelings of exhaustion I was back to the grind of life. I didn't have the typical symptoms of a brain tumor before my seizure, no headaches, and no changes in mental function or problems caused by impairment of specific brain regions. No weakness on one side of my body. No sensory loss on one side and no visual symptoms. No word finding difficulty (aphasia), and I certainly didn't have difficulty walking.

Back at the London hospital, two doctors walk in with scans in hand. "Do you want the good news or the bad news first?" they asked. To give an air of courage, I asked for the bad news. "The MRI shows a Posterior fossa / petrous meningioma. It forms on the underside of the brain and accounts for approximately 10 percent of meningioma. It can press on the cranial nerves, causing facial and hearing problems. Petrous meningioma can press on the trigeminal nerve, causing a condition called trigeminal neuralgia." And the good news is, it is benign. I was still in a state of shock from the past events. It all happened so quickly that I missed being

excited about the good news. How could I be joyous? I was as healthy as a horse. A Firas (Arabic) is what they called me, which means a young and energetic horse. I lived a healthy life, exercised, and de-stressed through yoga and meditation. How was it possible that I had a tumor? My fiancé let out a loud sigh of relief. But I felt nothing, neither worried nor indifferent. I wasn't sure how I felt.

I was in a daze as the doctors explained and discussed treatments. They were certain it would be all good and gone after the surgery. This positivity reinforced my innate positive character. It was not until I phoned my parents that I became aware of the seriousness of a brain tumor. I did not realize how terrified people were of brain tumors, brain surgery, or anything that involved the brain for that matter. Their anxiety was overblown much to my expectation. I wanted to tell them to relax but I felt emotional by their fear. Thoughts of mortality started dancing in my head. I needed them more than ever but I was so far away with oceans between us. Tears started rolling down my face but I managed to keep myself together, for their sake.

I checked off a list in my head of all the possible carcinogens I might have been exposed to. I am an environmentally conscious person and hardly use chemicals at home. As a vegetarian, I don't consume processed foods. I couldn't think of any reason for having a tumor, but I had traveled to Tehran that year and the previous years, at least 20 times. Could that be the reason? It was very possible. There were many days the city's pollution was on high alert. I was surely exposed to carcinogens on a day to day basis in Tehran.

I opted for surgery. The best option for my diagnosis. Feeling weak, filled with anti-seizure medication, I decided to see the best neuro-surgeon in Iran. My doctor was a slim, perfectly coiffed gentleman in a navy Brioni suit. A chic and handsome older man with a comforting scent. His voice and energy instantly put me at ease. His confidence exuded hope.

However, my family's sadness felt as though they were already grieving me. I could not understand why everyone was so somber. After all I was the one having the operation. "Surgery is the most common treatment to remove a brain tumor," my doctor explained. "I will perform a craniotomy which involves making an opening in the skull," he added with ease. "If the tumor cannot be at least partially removed, I may perform a biopsy, in which a small piece of tumor is removed so that a pathologist can examine it under a microscope to determine the type of cancer cells," he concluded with utmost confidence, as though he was going to bake a cake. Treatment for a brain tumor depends on the type, location, and size of the tumor, as well as the person's age and general health. Treatment generally involves surgery, radiation therapy, chemotherapy, brachytherapy, or some combination of these. (Alimohammadi, 2008)

At that moment I considered myself fortunate, God wanted me to be aware of the gift of life. Every molecule became significant. I was hoping the brain surgery would teach me a thing or two and I would wake up from my operation with some hidden knowledge that is only accessible to those who've had their skulls cracked open. I actually hoped to wake up speaking Italian. Rather, I imagined I'd groggily rub my eyes and look around with a new appreciation for the world around me. My new perspective would prevent me from getting upset about the small stuff. I thought after the brain surgery, I could rise above the trivial stuff we often find ourselves miring in.

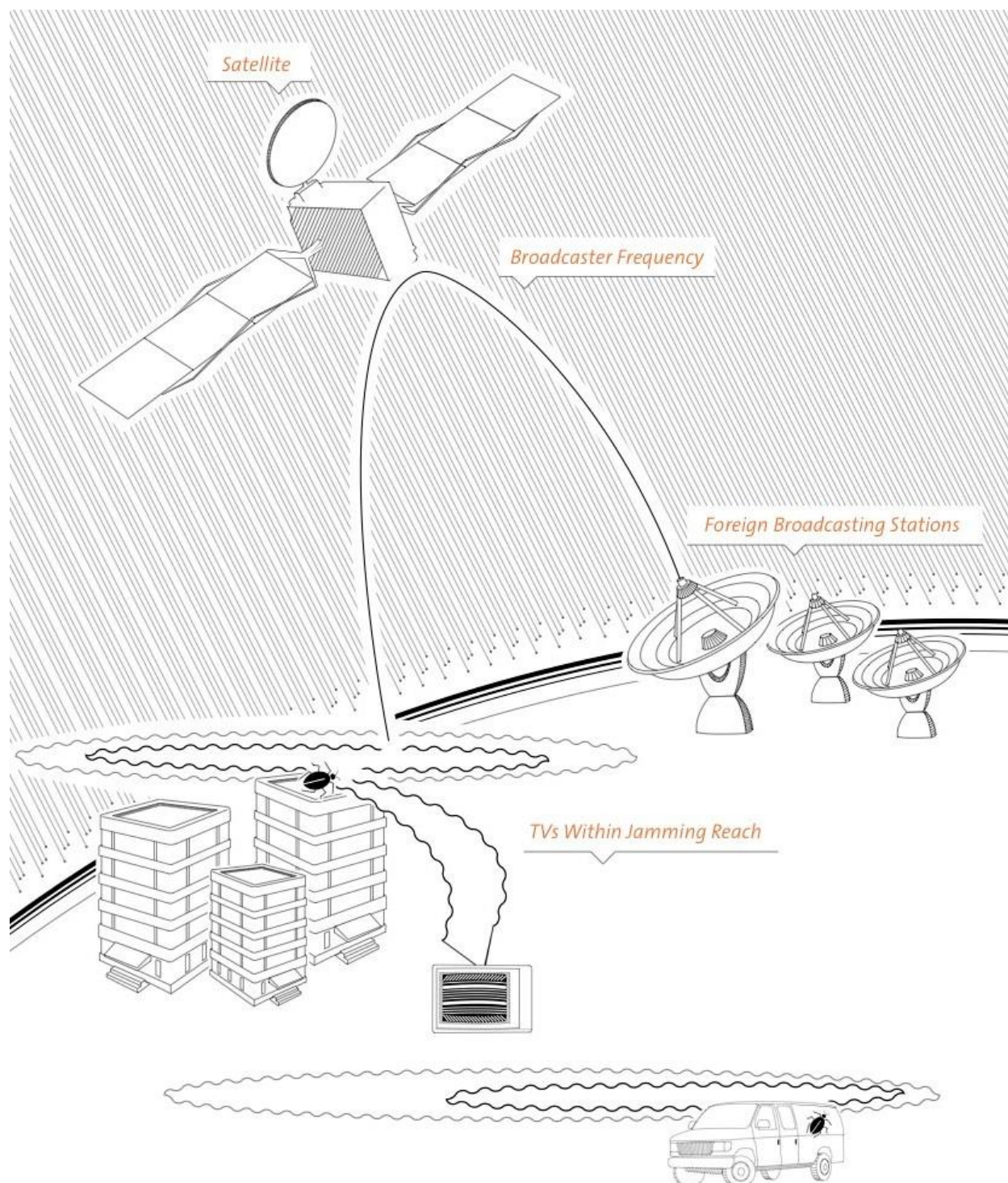
Brain cancer controversy

Information and communication technology is one of the most important and influential factors on changes created in societies. With the debut of the Islamic Republic for the past thirty something years, Iranians have endured the dangers of satellite signal jamming. The Iranian regime has intensified the clampdown on civil rights by using this

method to disrupt the free flow of information. It continuously jams the signal of international broadcasters, including CNN, BBC's Persian TV, and many others from the diaspora in an attempt to prevent media coverage critical of Tehran from reaching Iranians.

Despite the occasional crackdowns, satellite broadcasts are very popular among the citizens and most people have access to satellite television. It is estimated that 65% of people living in the capital can receive satellite TV but unfortunately at a cost, the cost of people's health. It is essential to trace and identify the source of jamming as the practice has many dangerous and negative consequences on people's health, particularly brain cancer. Massomeh Ebtekar, one of the few women members of Tehran's city council has criticized the government that jamming is dangerous for the health of Tehran's residents but she has also said that, "no one in the government is admitting to being behind the jamming."

Speaking to an immunologist and researcher, he revealed that these signals could be the source of many cancers and illnesses, especially brain cancer. Most physicians at the Cancer Institute of Tehran where I am conducting my research blame the jamming as a potential risk of many types of cancers. Personally, when I stay longer than usual in Tehran I feel the common symptoms of dizziness, nausea for no apparent reason and luckily I live in the mountainous part in the north of the city where it is difficult for the signals to be effective. However, just by going to the city I dramatically feel the changes in my cognitive activity.



In Persian, the word for jamming is 'Parazit', which is also the word for parasite. Portable terrestrial jammers have a range of 3-5 kilometres in urban areas and can be concealed on buildings or mobilised on vehicles.

“In Farsi, the word for jamming is ‘Parazit,’ which is also the word for parasite. Portable terrestrial jammers have a range of 3–5 kilometers in urban areas and are always concealed on buildings or mobilized on vehicles. Jammers work by emitting signals at the same frequency as the device they are attempting to block. “When Belgian soldiers in Afghanistan showed symptoms of electro-hypersensitivity-nausea and headaches – the source was believed to be the cell-phone jammer installed in their armored vehicle, which was there to protect them from explosions detonated by mobile telephones.” (Esfandiari, 2012) In 2014, the World Health Organization (WHO) released a statement adding radio frequency electromagnetic fields including microwave on their list of things which are carcinogenic to humans. (WHO, 2014)

Signals are transmitted via a variety of means. In Iran the use of high power electromagnetic frequency (EMF) is commonly used especially where there is short distance between the source and the human body. It is speculated by scientists that EMF can cause cancer through other mechanism, such as by reducing levels of hormone melatonin. Many studies have also examined the association between EMF exposure and cancer, of which few studies did report evidence of increased risk. (IARC, 2013) An Iranian study of satellite jamming showed the adverse effects of electromagnetic waves on gene and protein alteration and nervous system cancer. Moreover, the study indicated that if specific absorption rate of BTS antenna and parasites noise are higher than standard, negative effects will certainly occur. (Kazemnejad et al, 2014)

Unfortunately, the Iranian authorities have never divulged the exact strength of the frequencies used to jam signals, since it is done in secrecy, there is no way of knowing if the placement of antennas conforms to any safety guidelines. Even though the health implications are still being investigated by a committee of experts, I will not hold my breath on the results from a team that includes representatives from the communications ministry as well as the country’s atomic energy organizations, and other relevant departments. (Dehghan, 2014)

When I interviewed a patient with glioblastoma multiforme, what his symptoms were at the onset of his cancer, he remembered them as being the same familiar symptoms of exposure to interfering signals. The headaches that he thought were migraines kept

getting worst and turned into excruciating pain. Within 30 hours Ramin was undergoing surgery to remove a tumor. The surgery was a success, with doctors removing about 99% of the mass. He began a treatment regimen of radiation and then chemotherapy. But still his prognosis was not good. On average, patients with glioblastoma survive about 18 months after diagnosis, said Dr. Hashemi, an oncologist at the hospital. Ramin is back in the hospital waiting for a miracle to the most devastating malignancy of the central nervous system.

Counterclaim

Researchers believe, although it is important to keep the risk from environmental health hazards in perspective, brain cancer due to urban pollution is not conclusive. Other factors have a much more effect on the risk, particularly smoking. Also, scientists have evidence that mobile phones are unlikely to increase the risk of brain cancer. But they don't know enough to completely rule out a risk. Moreover, non-ionizing radiation used in a wide range of communications, electronic devices, mobile phones, etc., is a specific type of radiation. Most have less energy than ionizing radiation including: microwaves, electromagnetic fields, radars, etc., which means it does not have enough energy to change our cells in the same way as ionizing radiation. "Radiofrequency energy, does not cause DNA damage that can lead to cancer. It is only consistently observed biological effect in humans is tissue heating. In animal studies, it has not been found to cause cancer or to enhance the cancer-causing effects of known chemical carcinogens." (NIH, 2016)

Implications – Iran's cancer research status

Without correction, cancer occurrence measures can be remarkably under-estimated. Therefore, measuring the actual incidence rate of cancer requires the use of appropriate epidemiological methods. Cancer registry is an important tool for any successful cancer control program. Based on the report by Dr. Parkin, there are only three countries around Iran including Oman, Kuwait and Pakistan that have population-based cancer registry.

(Parkin et al., 2012) Compulsory report of cancer cases as a bill, was passed by Iranian Parliament in 1984. This was a good basic action that led to microscopic verification of the majority of cancer cases in Iran. The obligation to notify the cancer registries of new cancer cases has been a legal requirement since 1994. While only 18% of all estimated cancer cases were reported in the first reports, this rate increased to 81% in 2005 following establishment of cancer registries. But reporting to the Ministry of Health Registry was far from complete.

A network of cancer researchers was established in 1998 in order to develop better means of communication, resource sharing and effective research management as well as preventing inefficiency and wasting of resources available to cancer researchers and scientists in Iran. Cancer, the third leading cause of death in Iran after coronary heart disease and accidents, is increasing rapidly and is anticipated to rise intensely in the future.

According to a study there is an indication the top five areas of research priorities on cancer include: 1) Cancer surveillance and registration as first priority; 2) Exogenous factors related to the origin and cause of the cancer; 3) Surveillance-patient care and survival issues; 4) Issues of patient quality of life and end-of-life care; 5) Cost analyses and health care delivery of cancer services. (Taghipour, 2015)

Although, cancer patients access to the expert professionals as well as sufficient cancer detection facilities in Iran, but the delay in diagnosis is still an important issue. The delay time in diagnosing and treating different cancers in various studies is about 2 to 5 months. Delay in diagnosis affects the treatment and prognosis of cancer. Studies showed that delays related to the patients were longer than those related to the professionals. Patient delay makes a critical contribution to late diagnosis and poor survival in cases of cancer.

A correct cancer diagnosis is essential for adequate and effective treatment because every type of cancer requires a specific treatment regimen which encompasses one or more modalities such as surgery, and/or radiotherapy, and/or chemotherapy. These modalities are provided in the world-class cancer treatment in Iran. (Behtash, 2009) In recent decades, there was an excellent progress regarding cancer care and treatment in Iran. But,

we need to have access to more advanced techniques and methods including Molecular Medicine, Nanomedicine, and non-invasive therapeutic procedures. Studies showed that using complementary and alternative medicine among Iranian cancer patients is unpopular. (Montazeri, 2007) The primary goal of the therapeutic procedures is to cure cancer. Improving the patient's quality of life is also an important goal which is seriously placed on the agenda of cancer care. It can be achieved by supportive or palliative care and psychological support. (Mahigir, 2012) Unfortunately, most patients spend their last days in and out of ICUs of the Tehran Cancer Research Hospital. The following narrative depicts the Cancer Research Hospital scene:

It is the break of dawn in a chilly Autumn morning, families waiting, sitting on the pavements, many spread out on the grass and others preparing breakfast on their handy little gas stoves. The smell of fresh bread and sizzling omelets is surreal compared to the smell of antiseptic and rubbing alcohol most hospitals are known for. The back drop is a scene of a tall grey brutal-esque hospital building, merging into the Tehran smog.

There are parents, husbands, wives, brothers, and sisters, from other cities and from faraway villages, who have brought their loved ones in the hope to find the cure for their cancer. Everyone helps out, takes turn to buy the daily fresh bread for the entire ward. Every patient looks to nine o'clock when it arrives. Mrs. Labbauf is here with her 14 year old daughter, Haleh, who is suffering from an incurable brain tumor, Mrs. Labbauf sits by her side, knitting shawls as her daughter undergoes chemotherapy. In this cancer ward, behind the fresh smell of bread and cubed sugar sweet tea, are the realities of many people waiting who are terminally ill.

Nader is 11 years old with a rare malignant glioma tumor. He has come to the hospital with his 25 year old brother from Bandar Abbas, 450km away from the Persian Gulf. Nader's parents died in an accident before he

turned 6 and his brother serves as his guardian. Full of energy, Nader knows his results better than anyone else and corrects the doctor's mistakes if they even as whisper the wrong word or number.

Mr. Teymouri is 70 and comes to the hospital with his caregiver. He has a 6cm tumor in the left frontal lobe of his brain, but he insists he will live to 120. I overheard, in the past 4 months, the number of patients at the hospital has doubled, as the government's new health plan has been introduced; the president calls it "Rouhani-care." From all across the country, anyone with a slight chance of pain they never noticed, has now planned to have themselves checked out, one nurse tells me half with laughter, half with frustration.

Health has been a focal point of the Rouhani presidency, travelling all across Iran to publicize the scheme. He announced in February 2014, his plan will extend universal health insurance to all Iranians by 2018. Tehran's public hospitals have welcomed the new health provision with children being the most among those from across the country seeking treatment.

One particular day when I was there, it was children's day at the Tehran Cancer Research Institute when kids are brought in for their routine chemo injections. The ward felt different, there was life – a chaotic and tragic kind of life. "God loves you Ali, and I know he will see to it that you feel better," says his aunt. Ali is an eight year old boy with leukemia who is crying loudly because he doesn't want his chemo injection. "God doesn't care about me, and I will die anyway," he shouts back and continues bawling."

"The plan has especially filled the necessary gaps in the lives of the terminally ill patients, improving quality and efficiency of their medical insurance. Because, to use the public health system in Iran is a cumbersome full days' work chasing signatures, waiting in lines, begging

for approvals, and then starting all over again because someone signed a paper with the wrong information.” Mahmood who has Oligodendroglioma tells me.

Sadly, not many doctors concur. Well known doctors are refusing to carryout surgeries, or they just assign their students to do it; a top neurosurgeon at one of Tehran’s prime private hospital tells me. He is adamant this will not go down well. A beneficial health system needs doctors and nurses to cooperate. The nurses are another aspect in the context of the burdensome new health care plan. More affordable care has raised demand. “They don’t even consider us human, they act like we are robots,” an exhausted disheveled nurse’s assistant tells me. “The patients are receiving complete care, but double the number of people before,” she adds. A head nurse, Miss Shakiba tells me that they have continuously complained to the hospital board that they cannot maintain this much work. “At least they can raise our salaries,” she says angrily. She believes it is a great plan but without any thought given as usual.

As I walk through the hospital with a hospital janitor, he points to all the rooms, full with no empty beds. Many of them have four beds in one room. “We don’t have a second of quite,” he confides. “We even help the nurses inject the chemo drugs, so we are inhaling odd chemicals all day, he continues. Not only am I working brutal hours, but surely, our lives are at risk too. Who knows of the consequences of dealing with these drugs every day for so many years?” he ends with a long sigh.

I ask a nurse with the biggest and darkest circles under her eyes while sipping on tea, cherishing it tightly, “Why are you here, working in this madness, and why haven’t you thought of moving to a private hospital?” I ask. She takes a good long minute, “I am here because of these patients. I know you don’t believe me, but they have taught me to be patient and I have learned to have faith. These people suffer from the worst diseases, but they smile.” she said, “Some of them even survive when they are

certain they won't. This is a strange place, the best and the worst in these long dreary corridors," she said with tears in her eyes.

"Science may provide the most useful way to organize empirical, reproducible data, but its power to do so is predicted on its ability to grasp the most central aspects of human life: hope, fear, love, hate, beauty, envy, honor, weakness, striving, suffering, virtue. Between these core passions and scientific theory, there will always be a gap. No system of thought can contain the fullness of human experience." Dr. Paul Kalanithi

Death and denial on the cancer row is devastating. Refusing to accept reality can be shattering for everyone. Families trying to cope and go along with the patient's alternative reality mostly accept as the patient pretends to ignore dangerous symptoms, and are unable to share their own emotional turmoil over the illness. Sometimes, everyone is left completely in the dark.

Mahmood's story is compelling in the following narrative:

Mahmood has been in the hospital for months, suffering from terminal cancer but refuses to accept that death is near. Yet such absolute denial of terminal disease is surprisingly a common occurrence on the cancer ward. But it can have a devastating impact on the family and friends who care for these patients. Suddenly, loud wailings and weeping fills the ward. In the next room, a teenage daughter arrives at the hospital to learn that her only parent will not be coming home – minutes before her mother dies. The impact must be devastating to have no time to say goodbye, I thought to myself as I looked sadly at Mahmood. He said, "The child is having major difficulties."

Patients like Mahmood, are people who until the end are carrying this protective mechanism like a tortoise shell. "It's been such a difficult element in my work for all these years, so challenging and causing so

much frustration,” confessed a nurse at the hospital. “The patients acknowledge they have cancer, but tend to minimize the seriousness of the condition that appears destined to kill them,” said the oncology professor at the Cancer Research Institute in Tehran. Despite what would seem like unequivocal evidence to the contrary, Mahmood remains convinced he will recover and has plans to marry his long time love inside the hospital.

Mahmood, a sallow, small-framed, frighteningly frail man in his early 30s was diagnosed with a brain tumor in October 2010 after unexpectedly experiencing a seizure and was taken to the Hospital. After a CAT scan followed by an MRI, the doctor confirmed his brain tumor. Without any biopsy they were unable to make a specific diagnosis as what type of tumor it was and guessed it was “Astrocytoma.” For 2 years, Mahmood was monitored with regular MRI scans and in November 2012 they located growth in the tumor and advised surgery. Following his craniotomy, he was advised that it was only possible to remove 50% of the tumor and therefore a complete course of radiotherapy was recommended. The tumor was diagnosed as an “Oligodendroglioma.” Further MRI scans were carried out regularly and in 2012 another separate tumor was picked up and noted as being aggressive due to the time scales and its size. Surgery was carried out regularly and this year another tumor was detected, again very aggressive. Further surgery was performed in August of this year and now he hopes to go under more chemotherapy.

This disease has affected Mahmood’s family previously when his younger brother was diagnosed with a brain tumor in 2005 after months of misdiagnosis. Despite two operations, radiotherapy and chemotherapy, Mahmood’s brother died at age 30. Doctors revealed they had never seen a more aggressive tumor in anyone so young. This was a devastating blow to the family and greatly impacted them when Mahmood was diagnosed as well. His prognosis bleak with less than a year to live.

During the journey through the illness, only Mahmood's conviction, positivity, faith, and beliefs has been his healer. Praying has been a new found therapy. He is now a full-fledged Sufi. He has had invaluable support from his family and friends and all who have been affected in some way by his illness. He follows a strict diet, some exercise, and when he is well enough, trips away from the city's dire pollution. Mahmood believes there should be more information, more support from doctors, organizations, and charities in order to raise funds for research as this seems to be the biggest problem in the country. Lack of knowledge and empathy is prevalent throughout the hospital. He adds, there needs to be dedication to providing more support to patients and their families, friends, and caregivers. Moreover, he confesses there is a significant lack of awareness on brain tumors and their impact.

Mahmood's mom, a frail woman in a black chador, with deep lines of pain and despair on her face, shared with me, "he acts as though everything is just fine. It is impossible to even acknowledge he is sick. It is very frustrating and isolating." She went on to say, "it feels it is necessary to maintain her loved ones sense of denial, but that keeping up the pretense of normalcy takes a toll in terms of anxiety, depression, and feeling enraged." She wants to only know about future finances or even funeral arrangements. She said they are constantly frowned upon if they ask the medical staff for information. A psychologist at the hospital told me, "In an effort to help these patients face reality, healthcare workers, doctors, and nurses should no longer disavow them of their beliefs, it is now a coping mechanism."

Mahmood believes he is not getting the care that he needs. He sometimes masks symptoms that might prevent him from receiving more chemotherapy he considers life-saving. He shyly disclosed, "Such problems as severe diarrhea that should have prevented him from getting chemotherapy." Mahmood is no longer eligible to continue chemotherapy

because of his weight. He used to weigh 75 kilos and now only 49. At his height of 155 centimeters, he is too emaciated. With his body composition, he does not reach the minimum requirement to continue chemotherapy. He secretly confessed, “I used to hide weights in my clothes a few months ago.” Mahmood does not acknowledge escalating pain and refuses to step up his medication level in response. His mom softly whispers to me, “He’s been crying for the past three days. He’s got pain in the neck, pain in the back, pain everywhere and he doesn’t want me to talk about it.”

In the absence of counselling, hospice, and palliative care, there is not a lot doctors and nurses can do in the face of such denials. The hospital only tries to help make practical arrangements. In the case of Mahmood, having very little money, the future is bleak. Maybe his only hope *is* denial. Due to expansion of chronic diseases and the increase in health care costs, there is a need for planning and delivering hospice and palliative care for patients in their final stages of life in Iran. The urgency for hospice and palliative care is rising and there is a perspective and belief that the right services are not offered to patients in the end of their life stage. There is no doubt that this type of care leads to reduction of health care costs, improvement of physical, mental, and social health of patients and family. Improvements in the quality of health care services is vital. In view of the increase in chronic diseases, and the cost of caring, the need for provision of hospice and palliative care is felt more and more every day. However, the awareness about these services is absent.

Despite the emergence of advanced diagnostic and treatment technologies in hospitals, the scope of hospital based treatment is limited in the end of life (EOL) patients. These group of patients usually receive limited professional care, and their families have limited knowledge about hospice and palliative care. These types of services have not yet been designated and operated in Iran and there is no study in this field. It is mostly handled by nurses and their role is only to help patients and families accept and understand death. Given the changes in the pattern of diseases throughout the world, especially in countries such as Iran, as well as the increase in chronic diseases and related care costs in hospitals, therefore, addressing hospice and palliative care in the Iranian health care systems is paramount.

Counterclaim

Even with the advances in medical technologies for end-of-life care, decision-making exposes oncologists to many serious ethical issues. In a study, three main topics were addressed in the end-of-life care for terminally ill patients: illness factors, socio-cultural context, patient-physician relationship, and cost considerations. The most important factor was uncertainty about treatments, prognosis, quality of life, and external factors such as economic and legal issues. One important issue is telling the truth to patients at the advanced stage of their cancer which leaves doctors and families to hide the specific information from the patients; so as to not minimize their hope. In Iran, families make the final decision whether the patient must be informed or not, a practice prevalent in the Islamic patriarchal culture. Furthermore, many doctors are unwilling to tell the truth as they are not prepared for such relationship because they have not acquired any formal training in this type of communication skills such as breaking bad news which is quite essential for end-of-life care. Moreover, oncologists face the moral issue addressed by expensive treatments as to whether these intervening treatments are worth their exorbitant cost. Therefore, making decisions in these serious situations is very challenging and distressing for Iranian oncologists. (Mobasher, 2013)

“Any system that values profit over human life is a very dangerous one indeed. Simply put, it lacks value, and such a system will eventually collapse once its true light is discovered by the masses.” Suzy Kassem

How I wish that were true. In a real democratic society Kassem's theory would ring true, but in Iran masses know a great deal of truth but cannot do a thing. They cannot rise against a government that suppresses them and where state executions have gone through the roof for seeking the same freedoms we take for granted in the West.

Since environmental degradation is such a big issue, investigating the values of the petrol pushers and other polluters will hopefully lead me to stop them or just wishful thinking. Last

week brought Tehran the worst polluted day I have ever experienced. I had to conduct some interviews in the center of the city and by the time I got home I was in a state of collapse; excruciating headache and simply blinking was painful. There were continuous reports on the radio which chimed in every hour about how authorities have done so much to combat air pollution. But why do I see and breathe the most densely poisonous air this week? It is reported at a dangerous level, schools have to be shut down and people are ordered to stay home. The taxi driver said, “They just talk and don’t do enough. The political factions accuse one another of irresponsibility on the issue.”

I was looking forward to interviewing a member of Tehran’s municipal council, a big shot in the urban development committee. It was a cumbersome meeting to set up and only possible by clout. His name for privacy reasons shall not be revealed but we can call him Hassan for the following narratives’ sake:

Hassan, a middle aged short and round man started spitting out angry words as we took our seats. Immediately accusing Iran’s Environmental Protection Organization of ineffectiveness and incompetence. He said, “The government and the (Tehran) municipality have announced that they are not blameful on this issue. So, the sole blame are the poor people who are losing their lives!?” He was skeptical of what President Rouhani claims that over the last three years Iran has shifted to consume (natural) gas in industrial centers and power plants to reduce air pollution. Hassan doesn’t believe it. I told him Rouhani claims his administration has replaced low-quality fuel with Euro-4 standard fuel and has phased out 809,000 old vehicles. We both let out a loud laugh. One can still see old buses, heavy vehicles running on diesel, very old cars roaming the streets, and worst of all the motorcycles; 30% of Tehran’s pollution is due to motorcycles. Hassan pointed the finger at the Oil Ministry and blamed it for disregarding investment in efficient energy use because fossil fuels makes them big bucks. He said, “Iran, home to 77 million people, is a fossil fuel powerhouse.”

Hassan believes if the Oil Ministry fulfills its commitment, investors will improve the transportation network, which eventually will help to resolve the pollution issue, which will ultimately reduce cancer and other diseases. I pointed out that most people blame the previous administration (Ahmadinejad) for the wrong plans and policies which left the country in a tangled web of sanctions that led to the consumption of non-standard fuel. “So, who is to blame now?” I asked, “What has changed since 2012?” I reminded him that 432 people died in the last few days and who knows how many more have been added to the list of cancer and other disease incidents. Hassan is sure that before fixing the countries’ problems such as proper solutions and infrastructure, they waste our God given resources on external objectives. He was starting to go on a political tangent because ultimately everything in Iran is politicized, even the air.

I asked Hassan what solutions he sees effective. He said, “The solutions are: ban diesel fuel which most trucks and older heavy vehicles run on, ban older than 10 years vehicles, dispose of them entirely.” We both agreed on the alternating days of being able to bringing your car out which helps a great deal (a scheme of allowing only the odd – even number plate bearing vehicles). This forces the owners of cars and vehicles to come out with their cars on alternate days only. He said, “He does not understand why the new plan to introduce Euro VI norms has been scrapped?” Hassan was especially angry at the fact of instead of utilizing what land is left in the city into parks, they make more buildings, they keep constructing. He agreed with me that it all boils down to politics – air pollution has a very strong political component. Hassan firmly believes, “Almost all political rivals are either trying to disclaim their respective organizations’ responsibility of the problem or accusing their rivals of mismanagement.” He finished our meeting with, “The people responsible only care to travel abroad, have grandiose homes in unpolluted mountain air and are paid handsomely while along with their families are hardly ever exposed to these issues.”

I managed to squeeze in one last question for Hassan, why doesn't the Oil Ministry introduce alternative fuel? He replied, "Because there is rampant corruption in Iran's oil industry and it only promotes deception. Relative abundance of substandard fuel and low cost of conventional gasoline means that alternative fuel is unlikely to be adopted. The energy companies have so much to gain economically, they will never forgo profits for health," he added. I reminded Hassan about what Iran's Vice President Ebtekar had promised, that the Ministry of Oil as well as the Industry of Mines and Trade were commissioned with the task of regulating fuel and vehicle standards. He replied sneeringly, "Whenever there is pollution covering the city, we hear about mobilizing various government agencies to combat the crisis, they insist that they can solve the problem overnight, but unfortunately they forget that these hurried decisions are making the problem worse." We both laughed about the only signs of official action are the smog warnings to send students home and asking people to stay home.

While driving to my next meeting in the noxious smog, I thought the solution to this complex problem requires difficult decisions. They have to include: stopping any new residential and commercial developments, levying high taxes on private car owners in the capital, increasing fuel prices, imposing strict environmental standards on vehicles entering the city, increasing fines for offenders and so on. But would they ever? My head was exploding, contemplating that none of the responsible organizations are willing to bear the political burdens of such hard and unpopular decisions. Therefore, the issues are set to drag out, at least for the near future; like a game of ping pong, the municipality blaming the government and vice versa. My second interview on the same day was with an environmentalist in academia named Ali. The following narrative illustrates our meeting:

He began immediately with blaming the Tehran City Council. I wondered if he knew that I had just come from a meeting with them. He accused them of exacerbating the pollution problem by cutting down trees and reducing the city's green areas. "12,000 trees were just recently cut down to build a highway," he said. He added, "In the last ten years, five thousand hectares of orchards have been destroyed around Tehran due to greedy land speculations." He admitted that this problem cannot be solved by legislation alone. He believes there must be effective steps to prevent polluting vehicles and motorcycles from being on the roads, catalytic converters should be enforced (none of the cars made in Iran have catalytic converters installed), heavy vehicles should be checked regularly for pollution levels, old buses and minibuses should be equipped with smog filters. Also, the biggest problem is that cheap fuel persists because raising petrol prices is politically difficult. At the end of our meeting he said, "There was a good plan ready for implementation in 2013, but it underwent some changes in the following years and then no one heard anything about it." I told him this reminds me of what Naomi Klein said in her book *The Shock Doctrine*, "The parties with the most to gain never show up on the battle field."

Counterclaim

There are problems with oil, gas, and coal but the benefits for the people is beyond argument. There is no doubt in our minds that fossil fuels have contributed conclusively to Iran's prosperity and advancement. To ditch the enormous economic benefits, you would have to have a pretty good and convincing reason. The serious question on everyone's mind is we are destroying the country's air and making people sick, but do the wealthy bourgeois of Iran think they are? Fuel is extremely useful and valuable and even more mightily important geopolitically. (Kanovit & Lenes, 2016) Iran's government seems to be in denial about what needs to happen to the fuel sector. The vast majority of the population wants air pollution to be dealt with, but can we give

up a free from pollution environment over cheap fuels, flights, and goods? Can Iran restrain itself from leaving trillions in the ground? I say, you don't change anything by just yelling.

“Art holds out the promise of inner wholeness.” Alain de Botton

The healing power of Art

Art is powerful. It goes beyond the basic physical realm; it usurps the moment. It aims at something *beyond* itself and the one who creates it. Art expresses the invisible world; it announces a veiled story. I believe art can have the same vital qualities as religion and spirituality. I have admired many works that have ascended me out of myself.

I once attended an exhibition, and when it was over, there was an intimate “talk back” with known artists, curators, and writers for interested visitors. The experience made me realize that all of us in this room together are seeking a higher experience than in our day-to-day lives; all opening up with questions from the heart and receiving replies from the heart. The entire gallery was charged with electro-magnetic humanity. It was a collective human-ness. It was larger than life and a force greater than all of us. It was the force of synergy. The feeling was exceedingly more satisfying than any time in a church, mosque, synagogue, or temple that I have experienced. I thought, art like this has the ability to substitute religion for those seeking alternatives.

To be touched by the creative facets of the inner world, one gets to own an endless treasure. There is no greater gift in life than the gift of creativity. Creativity is the language of God's love and to lead a life of creativity is playing in the image of God. Everyone has the ability to be creative in some way. The most apparent ways are drawing, art in some form, or writing. Creativity is linked to the imagination and whatever the imagination concocts brings something into our lives.

It is proven that ‘Art Therapy’ improves and enhances the physical, mental, and emotional wellbeing of individuals of all ages. It is a gratifying activity that encourages dialogue, lessens

anxiety, raises self-awareness, aids patients identify and probe fears and doubts, and promotes healing as a whole. Therefore, 'Art Therapy' can improve the quality of life in terminally ill cancer patients. There is quantifiable data to support the claim that art therapy is a creative and powerful treatment for a variety of symptoms, age groups, and disorders.

Transcendence through spirituality may be addressed through art therapy, specifically palliative care. It suggests that creating art is intensely infused with transcendent and non-materialistic nature of human experience, and that religion and spirituality are intertwined in art as they are entwined in life. Looking at art therapy in palliative care, spirituality is established as a compelling gauge to the experience of the terminally ill and dying. Art therapy assists in giving meaning through the use of art materials and images, and therefore stimulating an intra-psychic area where spirituality can be recognized, analyzed, and understood. The psychotherapeutic benefits of this method are defined by the affirmation of individuality and identity, and an increased sense of personal acceptance and worth. The creative language of art can also allow the expression of existential questions in relation to death, dying, loss, and grief.

Many patients diagnosed with cancer, will experience high levels of depression and anxiety which introduce the need for a mental health perspective and recognition of the existential issues that rise in end-of-life care. Spirituality provides meaning by amplifying the understanding of the relationships and connections we have with those who share the most intimate aspect of our lives. The human spirit, spirituality and religion draw our reaction to, and understanding of, health, ill health, disease, death, and dying. It is futile to isolate spirituality from the core of human experience, specifically in the area of suffering. Fear and uncertainty can provoke dormant existential anxieties and dreads about physical debility and mortality. Physical, emotional, and psychological confidence and certainty face risk and are challenged in a manner not anticipated or prepared for in the context of palliative care. Art may promise to re-envision life, showing unimagined prospects and igniting a curiosity about the things that make life meaningful. The experience of art presents the chance to be transformed. Making art is undisputedly a spiritual exercise, or at least gives a spiritual element to life worthy of attention. Creativity, the imagination and the making of art herald spirituality, and hint at transcendent possibilities. Visual art has the capacity to render its viewers with symbols that draw on the

reflection of existential ideas, and it is the presence of the viewers and their responsiveness that expedites contact with spirituality.

Visualizing experiences, memories, and feelings through the process of creating drawings and paintings provides relevance by which spirituality can be analyzed. The urgency for a creative space to therapeutically lull problems and uncover coping methods becomes necessary. Images and envisioning become the spiritual composition of artwork created in art therapy. Art has the ability to awaken and excite human beings to spiritual realities.

"Exactly in this time, when we search inside of ourselves

Exactly in this time, when we understand and accept despair, anger, jealousy, need, and mistakes

In this exact time, we find God in our heart

In this exact time, God will take us on the journey of love."

Neda Nickzad

Art therapy is a therapeutic mediation that can assist the communication of intricate psychological reactions to death and dying. In addition, it provides the convenience for the terminally ill patient to express and explore their spiritual needs. The diagnosis of a life-threatening illness and the progression toward palliative and end-of-life care conjures up a number of probable abysmal levels of distress. When death and dying are the focus of the task in art therapy, spirituality is a critical area of experience that requires attention. The call for spiritual need in the midst of death and dying means that patients attempting art therapy are given every chance to envision and communicate these ideas in their artwork.

At therapy is where spirituality can be accepted and achieved within the context of palliative, end-of-life care, and other fields of mental health care. Spirituality is a domain of human experience that can be navigated through the non-verbal expression conducted by art. The art therapist is available to present an analytical stance and to assist in self-realizing spiritual insights through the symbolic, expressive, and figurative body of drawings and paintings. It is noticed as having an important influence and definitive impact on recovery, healing, and growth. It calls for psychologists to develop a language and terms that are all-encompassing of spiritual

changes and implications. This is complex area that, if abandoned only to the faith of the religion such as Islam, may leave already-troubled souls in greater distress, and devoid of the opportunity to find spiritual solutions to material needs. The following narrative, shows the experience I gained with a terminally ill patient:

Gisoo is 29, recently married and trying desperately for a child. She has been diagnosed with brain cancer, partial craniotomy and partial resection of temporal lobe. She has gone through surgery to stop the growth of cancer but her tumors come back every time, more aggressive. Doctors have given her a prognosis of six months to live. She suffers from a multitude of side effects. Unfortunately her debilitating headaches are difficult to manage with medication. Because her tumor is so large, doctors prescribed full brain radiation. She told me she wants to die with dignity.

Gisoo comes from a poor neighborhood in the outskirts of the city where there are hundreds of industrial factories. However, she is loved by her neighbors and friends. As we sat together in her living room, she gave me an account of recent events. She excused herself for not being hospitable enough because she is always exhausted. I could see the impact of her illness was causing her high levels of anxiety and her prognosis fueled a profound fear. Gisoo understands that her cancer has advanced and progressing quickly, and she talked openly and explicitly about dying. She is terrified of deteriorating into an undignified state where she would be completely dependent on her husband and sister.. She is particularly fearful of physical pain and imagines her last days will be spent in agony. Gisoo needed much reassurance in order to reduce her fear and the accompanying tension that was producing ever-increasing levels of anxiety, disrupting her sleep and causing her to experience periods of depression.

During our meeting, Gisoo talked about her beliefs and values, and how life has taught her to watch her back and always be sure to prevent others

from 'getting to you first.' She spoke honestly about the vulnerability she now experiences, and said she felt like a different person and wanted to understand why. Our meeting took place in a brightly lit small living room, with the television softly playing in the background. Her sister brought us tea in big glasses. Working in this environment required a degree of flexibility and the ability to adapt to a living space with family members without compromising the therapeutic boundaries. While we sipped our teas, Gisoo shared her confidence and happiness by my presence and had many things she wanted to share about her life. As we talked, I realized that some of her fears were related to having witnessed her mother die painfully from cancer. As she began to feel a sense of balance, Gisoo was slowly able to confront death more directly. I told her we are going to work through many of the causes of her anxieties and asked her if she likes to draw. She said she often doodles at the kitchen table. She was surprisingly familiar with using pencils and watercolor, and she had a small case of materials hidden in a closet. She also showed me a few sketches she had done. This gave me the opportunity to talk about my experience with children with cancer and the way to utilize new drawings she can make to reflect on her experiences. She understood that art could be a way of expressing feelings. She settled making a drawing as we talked, using a pencil and at times color. Her drawing contained an abundance of ideas relating to dying and death. I noticed the image explores many issues with Gisoo's fears. There was the depiction of a headstone in a graveyard and the reality of her prognosis. She was facing death with defiance, grieving over her loss and overcoming her fear of physical suffering. Gisoo clearly expressed the emotional distress she was experiencing about her illness. She continued working on her drawing with intensity and concentration as she talked about her thoughts and feelings and about preparing for death. She explained that it was fear of pain that caused her the most anguish. She kept going over the headstone making detailed and elaborate lines overshadowing a grave that was empty

and waiting for her. There are footprints in the drawing by the grave, where the family will stand at her funeral. The emphasis by a red line and drops of blood like tears was evident at the bottom of the drawing.

Gisoo reflected on her diagnosis and the impact that it had so quickly on her life. She felt angry and powerless in the face of rapid progression of her illness. The drawing also enabled her to address the question she had about the nature of death and what happens after death. Gisoo doesn't believe in the afterlife. I felt a sense of urgency in our meeting as though the time was against her. Gisoo was preparing herself for death and her drawing gave her an imaginative frame to contemplate her existential challenge. She brought to her drawing her personal world and entered a visual narrative that helped her to contemplate the meaning of death. Gisoo was able to express herself and did not have to uphold the pretense of being tough. She was seriously thoughtful about her destiny.

As we worked together in this meeting, Gisoo and I reflected through our dialogue on the nature of suffering, dying and death. We were both confronted with the need to make sense of this reality. We worked together around and through the mediation of the image, as we explored meaning and understanding of permanent separation and loss through death. The religious iconography 'Hamsa' of Gisoo's image is an example of symbolism: a headstone, the grave, emblematic Hamsa, and flow of blood. Death is visualized within the drawing in such a way that enabled Gisoo to contemplate her mortality within tolerable levels of anxiety. Gisoo's image also provided her with the opportunity to dig deeper for resolve in the face of dying. Gisoo's drawing suggested the presence of the spirit above the grave, looking at the empty spot where her body will lay. Gisoo asked many questions including: 'Will I be remembered'? 'Will anyone take my place when I die'? These existential questions may never be answered.

Gisoo took an imaginative approach to death and echoed what it would be like to be separated from her loved ones forever. I saw her symbols taking hold of her imagination, and triggered a spiritual aspect to her life. So, art therapy has the potential to initiate a search and renewal of faith. For Gisoo art therapy was very personal, where she devised an image to explore spirituality in her own way and her own time. Therefore, this presented me the limitations of art therapy. Because if Gisoo wanted to explore her faith through religion, it would have been better to seek out a Muslim local cleric.

Furthermore, I sensed Gisoo had many existential questions that may never be answered, hence she has to continue with the unknown and the ambiguity of death and the anxiety of parting with her loved ones. The experience I gained by working with Gisoo just for a few days supported the importance of art therapy at the end-of-life by her infusing her drawing with her inner-self; which assisted in a therapeutic dialogue.

“Art is a lie that makes us realize the truth.”

Pablo Picasso

Art leads us closer to the truth. Visual art is a universal way to portray one's feeling and thoughts either true or lies. There are certain feelings that we cannot express in words. Therefore, visual art, particularly painting have been broadly used representation of truth for centuries. True art will timelessly expose the truth, whether it is a model, emotional truth, action of an object, or memories. Therefore art is a way of producing visual and superficial forms of deeply rooted implications and a way of communicating with others. In this quote, Pablo Picasso is referring to art as a visual exaggeration of reality, therefore it enables people to express the world in a better way. The following is a narrative with a cancer patient and the idea of art therapy to cope and heal, or maybe the miracle of recovery:

Morteza is at the threshold of death. I am not be able to see him anymore but our experience had a memorable impact on me; a lasting impact. His

story comes to mind because it eloquently describes how art therapy can make a difference.

At age 53, Morteza has been diagnosed with Brain Stem Glioma which has spread to his spinal cord. For most of his adult life he was a Jujutsu champion, a health guru who was adamant about what he put in his body. He was also a trainer working with kids striving for the Olympics. Because he as internet savvy, he knew a great deal what a diagnosis of meant and what challenges was laid ahead, including treatments that would be physically excruciating and extremely toxic.

We immediately clicked. I felt I knew him for so long and he showed a genuine interest to see my artworks. I asked him if he wanted to see one in real life; he positively obliged. I managed to head over to my gallery and pickup one of my latest half-finished works. When I got back hours later I saw the debilitating side effect of his chemotherapy session. But he jokingly said, “Oh, it’s nothing, just another day in the park.”

Morteza had a uniquely positive air about him, although you could see the result of fatigue from radiation. I felt he was happy that I had kept my promise and returned with my painting, all wrapped up for unveiling. We talked about his committal in doing whatever it takes to explore avenues on his disease. Morteza confessed he had never considered himself a creative person but he wanted to risk experiencing himself in art. I, on the other hand was curious to see how my painting would develop by this psycho-social experimental project.

As I unveiled the painting, I saw his initial surprise, then a long period of focus. I said I wanted us to finish this piece together. He said laughingly, “I can’t let you ruin this beautiful work.” I said, “Nonsense, it will be a museum piece.” We both laughed contagiously. Since I wasn’t allowed to bring paints, we resorted to using my box of Liquitex paint markers. I think I was more excited to start our session than Morteza. I asked him to start and just paint as he feels. While he was painting with a dark burnt

orange I asked him about his prognosis. The initial image he produced was of his anger in thick abstracts. The dark color he chose stood out generously over my pale palette of undefined images. He said, “For the first time I am profoundly angry.” He even blamed himself for his illness in spite of all the knowledge he had gained about his type of cancer and the healthy life he had led throughout his life. We discussed where he lived and if he thought the highly polluted area where he comes from could be the reason for his cancer. He said, “Maybe, or maybe it is caused by how much I use my mobile phone, speaking hours with my girlfriend in Malaysia.”

Although Morteza felt comfortable expressing his anger, I noticed he was putting his emotions into perspective and he was slightly de-stressing. His tone and brush strokes became calmer, using light green. As he picked up brown, he expressed his growing depression and how he had been masking it from his family and friends. When I asked him about the specific shape he was making, he brought about how well he had kept his depression concealed, deep inside himself and how the lines and the shape of this expression mirrored his feeling in this painting. Since our time flashed by, I told him I will bring back the painting in a few days after adding my own self-expression from our talk. I conceptualized that this preliminary art work will be the basis for a series of larger collaborations that might just be exhibited in my gallery one day; a support project for cancer patients. As much as I inspired Morteza, he inspired me.

Three weeks had passed since our first meeting and I was looking forward to visiting Morteza again. He immediately said, “Things really have hit all-time low,” He had experienced critical progression of cancer and he felt he was agonizing between life and death. He experienced despair over his prognosis. Fortunately, he had considerable family support who were available to help him during this rapid progression. We talked about death and if he believed in after life, soul, and spirit. Morteza confessed he didn’t believe all this Islam. He quietly said, “I am a Buddhist at heart but

don't tell anyone." He asked to paint and was curious to see what I had added to our collaboration. As I unwrapped the painting his smile was the biggest gift I could ever ask for. The few art making sessions we had heightened Morteza's willpower to find peace from his persistent anger and sadness about having cancer.

I visited Morteza for one last time yesterday, he had quickly become physically debilitated and looked exhausted. I brought him art materials so he could explore creativity on his own and promised to exhibit our work and all his subsequent works to make him the next Picasso. His excitement and happiness is forever branded in my mind. I am not sure how long Morteza has to live; his doctor doesn't think too long. Working with Morteza gave me an intrinsic sense of compassion that he epitomized in the mixed media piece we created together. The image has turned into a brilliant orange and red abstract-like blooms with dark green in the background that he said represented cancer taking over him. But the colors depicted in the foreground was his transformation into someone who was no longer a cancer patient. I wanted to believe he was able to make peace with his dying. I really did hope so.

Morteza's account is both pivotal and inspiring to all those who are faced with mortality in the face of a cancer diagnosis. Working with Morteza has reinforced my role and the belief about art expression as therapy for individuals with terminal illnesses. We never assumed art therapy as a remedy for his cancer, but I told him his creative expression is an integral part of his healing. I know Morteza will eventually die. However, I promised him that his paintings will become his legacy.

The creative practice of art within the context of therapy presents an experience that is not identified as health-giving. But art therapy is able to give patients the chance to visualize the narrative of their illness and produce in a manner to contemplate a post trauma of a diagnosis and coping. I know art therapy is fundamentally a way to find meaning and define each person's

experience with a cancer diagnosis, course of treatments, and consequently, death. Art therapy repeatedly becomes a passage for transforming feelings and awareness into a new life and thus, an outcome of creating a fresh impression of self.

“After all the shattering discoveries of science and conclusions of philosophy, mankind has still to live with dignity amid hostile nature, and in the presence of an unknowable power, and mankind can only succeed in the tremendous feat by exercise of faith and of that mutual goodwill which is based in sincerity and charity.”

Arnold Bennett

Cancer and pollution have more in common than one would think. We have efficient technical solutions to produce clean energy for 30 – 40 years but it has been slow (too slow in Iran) to market, why you ask? Because of the oil lobbyists and the politicians that support them. Similarly there are many homeopathic alternatives to traditional treatments such as chemotherapy, radiation, and surgery for cancer, but the big pharmaceuticals do not want you to know this. All they want is profits. Take Baking Soda for example, the best thing for cleaning and proven to be environmentally friendly, but why do we have to use chemicals that are toxic for our health? Why, you ask? Because it makes multinationals huge profits.

Traditional therapies commonly used called the three pillars of cancer treatment include: chemotherapy, radiation, and surgery. Most physicians opt for chemotherapy. But all it does is put the disease in remission but the health of the patient continues to decline. Chemo is awful for patients but good for doctor's pockets, the monetary gains are tremendous. All chemo does is kill your liver and kidneys. Mahmood, one of the patients I interviewed said with conviction, “The only thing doctors are good at is prescribing drugs, and cutting people up.” I agreed and told him that there is a lot of natural cures and alternative therapies and treatments out there but due to corrupt politicians and corporate lobbyists who hoard wealth, these cures will never come to light. And it is no different in Iran.

According to a 2004 report by Morgan, Ward, and Barton: "The contribution of cytotoxic chemotherapy to 5-year survival in adult malignancies. ... survival in adults was estimated to be 2.3% in Australia and 2.1% in the USA." Simply put, traditional treatments don't work. An interview with Dr. Webster Kehr revealed the damage of chemotherapy, "they simply use doses that are really high which kills the good cells and misses the target cancer cells," he said. Therefore, secondary cancers in the body makes the cancer spread to other parts of the body. Chemotherapy is carcinogenic and causes additional cancers. A mother of a little girl at the Cancer Institute in Tehran told me that chemotherapy caused her daughter leukemia. Why use treatments that will cause another version of the problem? Why keep treating patients with chemotherapy? Why just make the patients weaker? And don't even let me get started on the devastation caused by radiation therapy.

Oncologists rarely entertain discussions of lifestyle changes. Isn't a doctor's job to create optimal health in people? Why only chemo and radiation and expensive surgeries? Physicians continually maintain a person's illness by prescribing drugs, but never getting to the root of the problem. Why don't doctors teach their patients to turn their life around? For example when an obese guy goes to the doctor, instead of talking to him about the cure, the doctor just prescribes meds and asks him to come back in a month so he can prescribe more meds. It's a dirty cycle of profiteering if you ask me.

The big problem is that research is usually funded by pharmaceutical companies and their goal is to develop drugs and increase shareholder profits. There is no money in being healthy, all the money is in chronic illnesses. The system is simply flawed, there is no real incentive in real health, there is however incentive to write prescription medicines.

My head boils with so many questions. Doctors do not want to speak faith, they want to speak death. Although many are skeptical about alternative therapies, I believe I can help patients with terminal cancer to have faith in recovering. While some die, many others have miraculously recovered. Don't they need this chance? Morteza, a patient I met a few times surprised me in our interview because he was hanging on to the last string of hope and art therapy gave him an inkling of faith and I saw him entertaining the courage to fight. The doctors however did not want me to spend time with him or they just wanted to stick to traditional therapies. I asked his doctor why not continue the therapy now when he needs it the most? He advised me to continue

with the patient when he goes home. I said, “But he might not make it home.” Well, it’s in God’s hands,” he replied.

Why do physicians in situations at the end of a patient’s life try to use all possible measures to prolong life? They know it doesn’t work. But I know what works. Fresh air, nutrition, exercise, and art therapy. Being sent home, breathing Tehran’s city air again is counterintuitive. But a center in the north of Iran covered with dense forests, snow-covered mountain peaks, and impressive seashores, situated in villages surrounded with agricultural lands, plenty of orchards, and medicinal herbs will undoubtedly work. The major provinces in the north of Iran called Gilan and Mazandaran have been the desired locations for current technologically advanced medical centers. With its moderate climate, the area would be perfect for hospice centers for end of life care when all else fails or even forgoing traditional cancer treatments.

Hospice care in the big cities are depressing, with no escape from pollution. By allowing patients to breathe in fresh mountain air, eat nutritional food from the land, and drink water from mountain springs, walking, biking, and yoga among other activities, and therapy with art is the light at the end of the dark cancer tunnel. Most of the patients I interviewed confessed they love nature, they were nostalgic for the days they traveled to the north for holidays, picnicking along the mountainous roads, just sitting on the grass by the river, smelling wild flowers and picking fresh fruits from the trees nearby. Some even fished in the rivers. These were their sweetest memories they said.

The patients I talked to felt they lacked knowledge about alternative treatments and most had never even heard of art therapy and other alternative therapies such as eco therapy, music therapy, and others to improve their end-of-life quality. Also, these patients were concerned with the associated burden of caregivers and they wished for it to never happen. These picturesque centers in the countryside with spectacular surroundings and fresh air, some built on the banks of rivers with plentiful pools of spring water would concentrate exactly on alternative therapies including meditation, yoga, nutrition, art therapy and transcendence among others. The place is nothing but miraculous for the patients’ fragile immune systems.

These non-profit hospice centers for the terminally ill will provide medical, emotional, and spiritual help for individuals and their families. I will call it Mojeze (miracle in Farsi), a center to

a standard of perfect comfort for patients with counselling. It will be a place for people with terminal illness to work on emotional healing through art therapy at its core. The mission of the center will be to help people who are dying to do it emotionally and spiritually. Maybe it will even help mend broken relationships and answer questions like, “Where do I go from here?”

Iran does not have end of life support, however, plenty of medical support. There is a big gap between the two. Patients normally diagnosed with cancer will get lots of help to keep them alive, but once they get diagnosed as terminal they get dropped off the map. If I was the oncologist, I would ask my patients, “You have been given a gift in the time you have left – what are you going to do with it? Are you going to live in the shadows of death, or live life to its fullest?”

Counterclaim

Iran is a country facing many social challenges and where end-of life care services, as commonly designed in Western countries, do not really exist yet. End-of-life care is quite a new topic in Iran. From an Islamic perspective: it is customary during illness for Muslims to seek Allah’s (God) help with patience and prayer. Religion plays a vital role in the life cycle of the devotee, and there are specific rituals and beliefs concerning care for dying people. It is essential that an Imam (religious leader) is accessible to provide suitable religious comfort. “For Muslims, death is believed to be not only the cessation of a complex set of biochemical process, but also a belief that the spirit continues to live and dying is a passage from this world to the resurrection.” (Cheraghi, 2005) Admittingly, the spirit is eternal and does not disappear with death. According to Muslim’s beliefs and values, reading the Quran (the main religious text) can attain peace within those who are terminally ill.

Conclusion

Through this reflective development, narratives, memories, and feelings, associated with interviews, there is potential for an art therapist or researcher to explore further insights into end-of-life care. The possibility to transcend and contemplate death is a big part of this research that I

have presented. Art therapy has to be acknowledged and worked with in the context of end-of-life care. Transcendence can be achieved through the process of finding meaning for the patient's values and beliefs. This can be navigated through the non-verbal voice of art. The art therapist offers her analytical view to aid self-realizing insights through expressive drawings and/or paintings. It is observed as having a powerful influence on recovery, healing, and coping. Art therapy thus gives further assurance to end-of-life care of those most vulnerable in our societies providing a culture of care. I am currently assessing the development of nonprofit centers with various art programs. I envision these centers providing patients with another voice to speak. Since my own experience with art during my illness was so effective, I am now confident that I am capable of bringing art into any community to create an impact. I am grateful for my blessings that has allowed me to share my passion for creativity with cancer sufferers, now and in the future. As the Native Americans say, "You can change your world, your community, and even the earth."

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