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Prevalence and Effects of Electrohypersensitivity: Evaluating the Application of SPIRO in the Management of EHS in a Longitudinal Study of 357 Patients

(2014 - 2018)

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Abstract: This study examines the prevalence and effects of electrohypersensitivity (EHS) in a sample of 357 patients for 5 years, from 2014 to 2018. EHS, also known as electromagnetic sensitivity, is a condition characterized by a range of physical and psychological symptoms attributed to exposure to electromagnetic radiation. Using a survey consisting of 29 common EHS symptoms and additional questions about lifestyle and device usage, researchers identified six levels of EHS severity: initial electro-stress, medium electro-stress, advanced electro-stress, initial EHS, medium EHS, and advanced EHS. Results showed that the most common symptoms were fatigue, difficulty concentrating, and sleep disturbances. The study also found that certain types of electromagnetic radiation were associated with specific symptom patterns. For example, exposure to microwave signals was linked to symptoms such as ringing in the ears and pulses in the neck, while exposure to extremely low frequency (ELF) fields was linked to numbness in extremities and tiredness. The authors report that the application of SPIRO was successful in improving symptoms in 144 of the study participants. The authors suggest that further research is needed to understand the mechanisms underlying EHS and to develop effective interventions.

Objectives: Administer the EHS Common Symptoms Questionnaire to Dr. Leal's patients to analyze the results concerning their mental health conditions, including the severity of their depression, anxiety, confusion, and sleep disorders. The group of patients experiencing a range of EHS symptoms was offered the use of SPIRO as a potential intervention, and their progress was monitored for any changes or reductions in their reported EHS symptoms and mental health issues.

Subjects: 357 Cases (46 adult males / 189 adult females / 122 children) with manifested potential EHS conditions.

Design: Monitoring patients who manifested symptoms related to EHS, a total of 357 individuals. Of these, 144 patients agreed to undergo deeper assessments using the EHS survey and the SPIRO filters to determine potential treatment options.

Outcome measures: 6 patients scored in the initial electro-stress range, 11 patients scored in the medium electro-stress range, 40 patients scored in the advanced electro-stress range, 3 patients scored in the initial EHS range, 43 patients scored in the medium EHS range, and 5 patients scored in the advanced EHS range. Additionally, 71% of the patients (102 individuals) reported that painful symptoms disappeared within 36 hours of using SPIRO. On average, these 102 individuals reported feeling recovered from their most chronic symptoms such as fatigue, depression, anxiety, and stress within 27 days of using SPIRO, and all participants reported an improvement in their sleep quality.

Keywords: #Electrohypersensitivity #EHS #Electrosmog #Spiro #Noxtak #Aruba #Psychology

1. Introduction

The health effects related to electromagnetic fields produced by current, electric, and magnetic fields of ELF (Extremely Low Frequency) / LF (Low Frequency) and RFR (Radio Frequency Radiation) are being studied by multiple organizations, medical institutions, and universities. However, the data and studies are young (less than 25 years old) and conditions have fastly changed and even worsened in the last 10 years, especially with the massive WiFi, Bluetooth, 4G LTE, and 5G connections; In addition, the official recommendations for security and use of telecommunications are outdated.

Until now, official institutions have not confirmed with certainty that there is a connection between exposure to electromagnetic pollution and cancer or other serious health conditions; but there is accumulated scientific evidence that points to it, only more specialized studies are required to complete the link routes between this pollution and the increase in severe long-term health problems.

What is known so far as scientific facts are not the long-term health effects per se, but rather the alarming biological effects (short and medium-term responses in the human body) associated with this disturbed radiation. One of the most

important biological effects is the stress response it causes in our body and how it is capable of changing cells' behavior. What the scientific community has learned so far from this is that this response is electrical stress or electro-stress that increases over time and, in some cases, could lead to long-term electromagnetic hypersensitivity (EHS).

With the collaboration of a multidisciplinary group of doctors, engineers, and psychologists with experience in EHS cases, and following the path marked out by organizations such as the IGEF (International Association for Electrosmog Research), the Dutch Federation of Electrohypersensitivity, and Associations throughout Europe, the NOXTAK Center developed a group of surveys to document cases of EHS and obtain enough information to help us guide individuals in the right direction to ensure they take the necessary and correct measures in Electrosmog control, changing unhealthy habits, and promoting a healthier life. The protocol also invites the affected individuals to receive specialized medical assistance in nutrition, environmental medicine, and, in some cases, even psychological assistance to obtain genuine relief from EHS or avoid entering a serious EHS condition.

For this specific study, Dr. Robert Marshall Leal Lue has compiled a series of results corresponding to EHS individuals over 5 years (2014-2018). Dr. Leal is a doctor in psychology in cognitive-behavioral therapy and a physiotherapist with a specialization in applied kinesiology for the diagnosis of physical and psychological traumas. With more than 30 years of experience treating thousands of people, he treated hundreds of cases that consistently showed an increase in stress and anxiety behavior with multiple spontaneous painful symptoms that he was able to link with electromagnetic pollution or EMF.

Dr. Leal subsequently began to evaluate EHS patients and guide them, and he eventually became part of the working group that compiled the current NOXTAK Center's EHS Questionnaire, which consists of 29 common symptoms associated with EHS based on testimonies from multiple organizations in Europe, such as the Dutch Federation of Electrohypersensitivity, and scientific papers on the subject, such as those written by Prof. Olle Johansson of the Karolinska Institute in Sweden.

2. Definitions & Background

The term electromagnetic hypersensitivity or electrohypersensitivity (EHS) was first proposed in 1991 by William Rea to identify the clinical condition of patients that reported health effects while being exposed to electromagnetic fields (EMFs). In 1997, the term was used again in a report provided by a European group of experts for the European Commission to clinically describe this unusual pathology, which may imply EMF exposure. Five years later, in 2002, a study group in France reported similar symptomatic intolerance in users of digital cellular phones and among people living near wireless communication base stations.

In 2004, the World Health Organization (WHO) organized an international scientific workshop in Prague to define and characterize EHS, acknowledging it as an adverse health condition and defining it as "a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields".

However, Dr. Olle Johansson, one of the pioneers in the study of EHS, approaches the concept differently, claiming that electrohypersensitivity is not a medical condition, but a functional impairment in which the environment is the culprit for any temporal or permanent loss or abnormality of a physiological, mental, or anatomical structure or function.

Functional impairment is defined as difficulties that substantially interfere with or limit functioning in one or more major life activities including the following: Basic daily living skills (e.g. eating, bathing, dressing); Instrumental living skills (e.g. maintaining a household, managing money, getting around the community, taking prescribed medication); and functioning in social, family, and vocational/educational contexts.

In Sweden, electrohypersensitivity is recognized as such. This means that individuals suffering from EHS are not seen as patients, they do not have an overriding medical diagnosis, but the 'patient' is only the inferior and potentially toxic environment. This is also the approach used when conducting this study.

On the other hand, to objectively evaluate EHS cases, the expert team needed to consider the nocebo effect as an important factor that could have an important influence on the results.

The nocebo effect is defined as the negative outcomes produced by negative expectations deriving from the clinical encounter. Specifically, research on the nocebo effect indicates that information disclosure about potential side effects can itself contribute to producing adverse effects.

However, several studies have mentioned that the nocebo effect could be caused by other factors different from clinical encounters or medicines, and environmental factors, such as EMFs, could be one of them.

According to Dr. Robert Leal, an individual can, indeed, develop a nocebo effect related to electromagnetic radiation. In 2004, the first experiment that was made around the nocebo effect was connecting people to devices that could give them electric shocks. This group of people was told that these shocks were imperceptible, but they would receive them. They were told that the only problem is that they could have severe headaches later. The result was that almost everyone, had a really strong headache later; but the devices were turned off all the time and never gave any kind of electric shock.

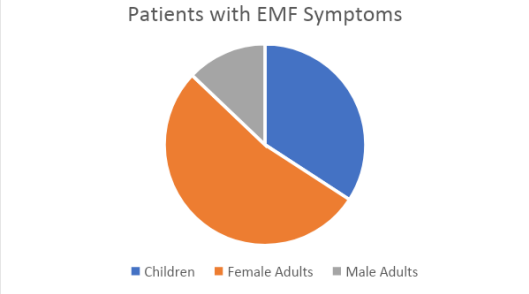
A specific study made in 2018 highlighted how alarmist media reports around EMFs could be exacerbating reactions due to a nocebo effect. The results revealed the crucial role of awareness and belief in the presentation of symptoms during perceived exposure to EMF, showing that healthy participants exhibit a nocebo response, and that alarmist media reports

emphasizing adverse effects of EMF also contribute to a nocebo response.

3. Materials & Methods

Following the protocol previously developed by NOXTAK, and using the EHS Common Symptom Questionnaire and additional surveys to evaluate the usage of household appliances and electronic devices, over 5 years (from 2014 to 2018), Dr. Leal came to identify 357 patients with symptoms related to exposure to electromagnetic radiation or what is called Electrohypersensitivity (EHS). These patients provided a variety of information about their lifestyles, habits, hours of use of wireless devices or electrical appliances, and more.

4. Results



Children	122
Female Adults	189
Male Adults	46
Total	**357**

The First Results: 357 cases of EHS

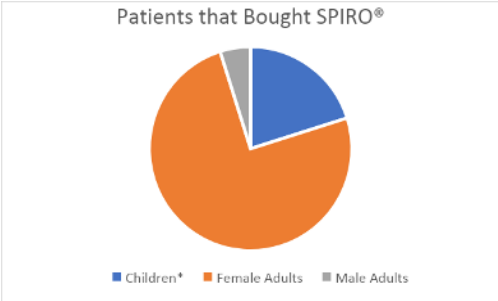
According to this EHS Questionnaire protocol, there are 29 common symptoms related to Electro Sensitivity or Electro-Hypersensitivity, people taking the survey should identify how many of these symptoms they have and how often these symptoms appear.

After this preliminary test, the EMF researcher can go further and ask about lifestyle, usage habits of electronic and wireless devices, and the location and physical address of their home and workplace to estimate far-field exposure to mobile phone towers, power lines, television stations, and radio stations, and ultimately, in extreme cases, the EMF researcher visits the homes/offices of those subjects most affected by electromagnetic exposure in order to look for the highest potential sources of EMF pollution, both indoors and outdoors.

According to the survey, it is possible to identify different EHS levels. Each answer is scored and added to a global score. This classifies the results into 6 levels based on the total score:

1. Initial Electro-stress
2. Medium Electro-stress
3. Advanced Electro-stress
4. Initial EHS
5. Medium EHS
6. Advanced EHS

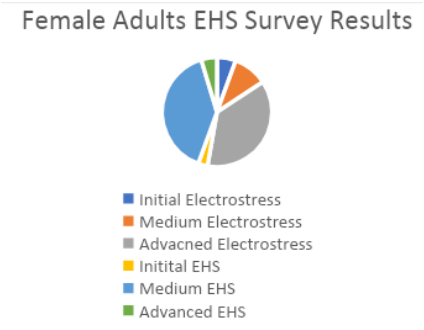
The EMF researcher can relate the type of electromagnetic source that is affecting the individual based on symptoms they manifest as more frequent in the questionnaire. For example, usually, an individual who manifests continuous problems of ringing in the ears, apparent tinnitus, and pulses in the nape of the neck, in combination with nervous alterations, is found in an Electro Sensitive or Electro-Hypersensitive case associated with microwave signals. While other individuals whose symptoms are more related to numbness in their extremities, tiredness, and general fatigue, as well as static problems when walking, are likely to be Electrosensitive or Electro-hypersensitive individuals associated with extremely low-frequency fields (ELF), which is linked to power lines and high voltage, dirty electricity, or accumulation of low-frequency fields from industrial machinery.



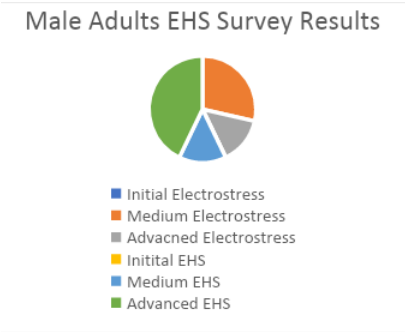
Children	29
Female Adults	108
Male Adults	7
Total	**144**

From the Group of 357 EHS cases, the patients received a special psychological orientation following the EHS protocol defined by the authors. In the most affected ones, those who accepted to receive more assistance were visited to perform extra evaluations in their homes in some cases and in other cases even in their workplaces. According to each type of electromagnetic exposure condition, each one of them received specific recommendations to use SPIRO.

Only 144 cases were willing to try the SPIRO option, and this group received special attention based on the results shown on their EHS Surveys.



Initial Electrostress	6
Medium Electrostress	11
Advanced Electrostress	40
Initial EHS	3
Medium EHS	43
Advanced EHS	5
Total	**108**



Initial Electrostress	0
Medium Electrostress	2
Advanced Electrostress	1
Initial EHS	0
Medium EHS	1
Advanced EHS	3
Total	7

This sums up to a result of 115 cases. The other 29 cases were children below 18 years old, who also mentioned suffering from a variety of these 29 symptoms, and their lifestyle and electronics usage were consistent with an estimation of Electro Sensitivity.

The result of the application of SPIRO in this group was remarkable:

- 71% of the cases (102 individuals) acquired and used the recommended SPIRO solution. Within an average time of 36 hours, the painful symptoms in their bodies had disappeared. Within an average of 27 days, all the general symptoms of discomfort with no known cause, chronic weakness, anxiety and stress, and poor sleep quality disappeared. The percentage of the group that followed the recommended dietary, vitamin, hydration, and change in lifestyle shortened the recovery time compared to other patients.

- The remaining 29% only acquired and used a partial quantity of the SPIRO products and, in many cases, did not follow the usage recommendations given to them, nor the changes on the dietary habits, supplements, and lifestyle habits. A group of them (around 45%) said they still felt a temporary, but not a complete improvement. Additionally, they said that they still had sporadic episodes of pain symptoms with no known cause. They were not as frequent as before but still existed.

Such results were consistent with the evaluations performed in each case, where only the complete application of SPIRO filters would lead to the complete elimination of EHS symptoms regardless of the affection level reached by the individual. The recovery would also be conditioned to properly follow all the recommendations given around SPIRO usage, hydration, nutrition, and supplements. .

NOTE: Honoring the client-counselor confidentiality, I'm not authorized by Dr. Leal to include the details of each patient (names, specific ages, home addresses, and work addresses) in this report.

There were 8 cases who, according to the symptoms manifested in the EHS Questionnaire, indicated having a severe level of Electro Hypersensitivity, the highest possible of the 6 levels classified by the questionnaire. However, 3 of these 8 cases, for about 2 weeks, continued to feel adverse reactions while being in front of pollution sources, such as a wifi router, their cell phones or those of people nearby, and even proximity to mobile phone antennas.

After analyzing the conditions of their environments, we could determine that these individuals were presenting a nocebo effect that was triggered only by knowing or seeing some of these technologies that they already recognized as harmful to their health.

These individuals were visited multiple times in their regular environments with measurement equipment. They were shown measurements in real-time to prove that they were no longer exposed to harmful fields. Only after several technical confirmations, these subjects gradually stopped the harmful negative association of the nocebo effect when they saw a polluting source.

5. Conclusions

Based on the results of this study, it is clear that electrohypersensitivity (EHS) is a prevalent and debilitating condition that affects a significant portion of the population. The EHS Common Symptoms Questionnaire and additional assessments with the SPIRO filters allowed us to identify different levels of EHS severity and the specific types of electromagnetic radiation that may be contributing to symptoms in affected individuals. The use of SPIRO as an intervention was successful in improving symptoms in the majority of subjects, with many reporting the total or gradual disappearance of painful symptoms within 36 hours. The subjects manifested they felt recovered from chronic symptoms such as fatigue, depression, anxiety, and stress within 27 days. These findings suggest that further research on the mechanisms underlying EHS and the development of effective interventions, such as the use of SPIRO, is necessary to improve the quality of life of those individuals suffering from this condition.

Our findings also demonstrate the complex relationship between EHS and mental health. It is important to recognize that certain individuals who have been experiencing symptoms associated with electromagnetism for an extended period may also develop paranoia, which can be

triggered by the presence of electronic devices such as smartphones, tablets, or WiFi routers even when the devices could be turned off and not emitting radiation at all, evidencing a Nocebo Effect to be considered in their recovery process. The delay in recovery or plain non-recovery could be related to this important factor.

However, it is crucial to note that this observation does not imply that all EHS cases are purely psychological in nature. Many of the EHS subjects from this study may not even be aware that electromagnetic radiation can have negative effects on their health. Our team has observed that, in many cases, individuals experiencing EHS symptoms are frequently exposed to a specific type of technology, and when that exposure is controlled and the individual is properly educated about EHS, their symptoms tend to disappear.

It is also worth noting that most health professionals may not have the necessary training to identify and properly treat EHS, leading to misdiagnosis and inadequate treatment. It is essential for further research to be conducted on the mechanisms behind EHS and for effective interventions, such as the use of SPIRO, to be developed in order to improve the quality of life of those individuals suffering from this condition.

In future research, it will be important to consider the use of more comprehensive surveys that collect additional data, such as mobile phone usage habits, food sensitivities, and the presence of potential paranoia and nocebo effects. Additionally, the use of tools such as HRV monitoring and sleep quality surveys could provide valuable insights into the overall health and well-being of EHS individuals. By gathering this additional information, we can continue to better understand and address the complex nature of EHS.

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