

RESULTS OF STUDENT SURVEY REGARDING SYMPTOMS ASSOCIATED WITH EXPOSURE TO MICROWAVE RADIATION FROM NEW WIFI ROUTERS AT UCN

I surveyed my students on November 27th and November 28th 2012 after finding out that a number of them were experiencing symptoms similar to mine after the installation of a new more-powerful WiFi system at our university (*Universidad Catolica del Norte* [UCN]) approximately the second or third week of October, 2012. Students attending the three classes – DOE 3B *Paralelo* 1 (18 students), DOE 3B *Paralelo* 2 (22 students), and DOE 4B (19 students) -- I teach were surveyed. Students were asked the following question:

"Have you been experiencing any – or an increase in – adverse symptoms since they installed a new more-powerful WiFi system at UCN approximately five weeks ago (since approximately October 15th)?"

Out of the 59 students surveyed 45 (76.27%) replied with an affirmative "Yes" while only 14 students (23.73%) replied with a negative "No."

Students who were experiencing symptoms were then asked to circle any among a list of symptoms associated with exposures to digitally-pulsed electromagnetic radiation like one would receive from WiFi and cell phones and then add any other symptoms they might be experiencing. The results are as follows in order of the prevalence of symptoms:

1. Headache: (33 students)
2. Sleepiness: (28 students)
3. Pressure in the head: (22 students)
4. Anxiety: (21 students)
5. Difficulty concentrating: (19 students)
6. Difficulty remembering things: (18 students)
7. Irritability: (17 students)
8. Fatigue: (16 students)
9. Waking up between 2 am and 4 am: (15 students)
10. Congestion: (14 students)
11. Nervousness: (13 students)
12. Vision problems: (13 students)
13. Eye pain: (12 students)
14. Sleep disturbances: (12 students)
15. Stomach problems: (10 students)
16. Flu-like symptoms: (9 students)
17. Heart palpitations: (8 students)
18. Insomnia: (8 students)
19. Nausea: (7 students)
20. Disorientation: (6 students)
21. Tachycardia: (6 students)
22. Night sweats: (5 students)
23. Tinnitus: (5 students)
24. Dizziness: (5 students)
25. Dry eyes: (5 students)
26. Muscle aches: (4 students)
27. Diarrhea: (4 students)
28. Skin rashes: (3 students)
29. Chest pain: (3 students)
30. Asthma: (2 students)
31. Difficulty breathing: (2 students)
32. Heart pain: (2 students)
33. Swollen lymph nodes: (2 students)
34. Chills: (1 student)

Other students also wrote under "Any other symptoms?" the following: "Loss of appetite", "Vomiting", "Easily tired," "Knee pain," and "Feeling tired in the afternoons between 12:00-17:00."

When asked what they thought we should do about the problem, the following are some examples of the students' responses:

FOR REMOVAL OF THE WIFI SYSTEM AND REPLACING IT WITH A WIRED INTERNET OR MOVING IT OUTSIDE THE BUILDING (20 Students)

VD, Male, Early 20s (DOE3B-1) *"I think they should get rid of WiFi. Put in some fiber optics. It's safer and faster. And I paid a lot of money [for my education].... So at least they should care about my health. Are they going to do something? Of course not."*

RC, Female, Early 20s (DOE3B-1) *"UCN should have more and bigger computer labs with wired connections so they will not need more [wireless] routers or a more powerful antenna because they won't need WiFi connection."*

JC, Female, Early 20s (DOE3B-1) *"In my opinion, it would be a good option to put [in] wired connections. But I don't know how they can be put in because it has to be useful for a huge amount of students but without risking their health. The main [issue] is how Internet can be [provided] by the university to the students without risking their health."*

LL, Female, Early 20s (DOE3B-2) *"I think that UCN should change the Internet connection from a WiFi to a wired one."*

VV, Female, Early 20s (DOE3B-2) *"First of all, I had no idea about this new WiFi system at UCN. I have felt weak but I associated it with the final weeks of exams because we get stressed. Now, I worry about what this system can produce in my body. However, I think there are not many possibilities to make a change. Although this WiFi system can be dangerous, authorities will not listen to us because we don't participate in big decisions. Authorities are not aware of what this system can do to us so it will be difficult to find support from them unless all the students decide to let the director know how worried we are about it. The problem is not many people know about this [problem]. Maybe we can send an email from all the students in the program, but I think they will not pay attention to us because technology may be more important than [people's] lives. What a shame!"*

PLD, Female, Early 20s (DOE3B-2) *"I would move the WiFi to another location, and as a place outside this building. It would be good to start using wired connections instead of using wireless devices. It is necessary that people are informed at UCN about this issue – that way, everybody can support the idea of doing something to avoid getting sick because of the radiation."*

BM, Female, Early 20s (DOE3B-2) *"I think UCN should change the Internet connection from WiFi to a wired connection."*

CC, Female, Early 20s (DOE3B-2) *"Maybe it would be more useful for everyone if they just let us use the computer lab on the second floor, thus removing the WiFi signal on the 2nd floor. If we had unlimited access to the 2nd floor lab, then we wouldn't need the WiFi signal that much. I don't know if it is because of the signals in this building, but I always feel ridiculously sleepy when we have classes here, which doesn't happen when I have classes in the 'R' buildings."*

AA, Male, Early 20s (DOE3B-2) *"If taking away the router is the reason why a good teacher is staying or leaving, I would prefer the router to be removed."*

AC, Male, Early 20s (DOE4) *"I think that the WiFi router should be moved to a place outside of the building. I say this because I know that people in the university are not going to remove it. So I think that the only way to solve the problem is by moving the router to*

another place. Also, they can provide us with wired Internet connections so in that way we could have Internet everywhere without being affected by the WiFi system."

OE, Female, Early 20s (DOE4) *"I don't know if the WiFi would have the same effect if it were installed outside, but because it is necessary for every student, no only for the ones in the program, they can't get rid of it. It is necessary to install it outside."*

ME, Female, Early 20s (DOE4) *"They should get rid of the wireless connections. Or maybe they should be reduced. Although the damage is already done, we can do things to prevent damage in our bodies."*

PC, Female, Early 20s (DOE4) *"I think that if we are being affected by the wireless machine, that it would be good if we can find a way to solve this problem maybe by changing it for another one less powerful or just taking it out of the building and trying to see if the real reason responsible for my symptoms is the wireless machine."*

VP, Male, Early 20s (DOE4) *"I think they should get rid of the WiFi. They should buy more computers accessible to the students. They should replace the WiFi with wired connections."*

RK, Male, Early 20s (DOE4) *"There are some alternatives to WiFi connections. One of those is wired Internet, which is more difficult to install and more expensive – however, people's health is priceless."*

GS, Female, Early 20s (DOE4) *"Since we need Internet connections to do homework and stuff, I think more wired computers should be bought in order not to use WiFi."*

FF, Female, Early 20s (DOE4) *"I think the School of English should try to use another method like wired connections. They are as useful as wireless ones."*

RP, Female, Early 20s (DOE4) *"I think the School of English should take out the wireless and put in a wired-Internet connection. The wireless system really effects our health and the consequences are terrible."*

AM, Female, Early 20s (DOE4) *"I think the Escuela de Ingles should be more considerate with people who are suffering from electromagnetic radiation and take out the WiFi and put it somewhere else."*

HC, Female, Early 20s (DOE4) *"I think the English Department should change the WiFi or look for a real solution to this problem. Most of the students are suffering with this electromagnetic radiation and maybe it will increase the symptoms."*

FOR MOVING THE WIFI SYSTEM TO 1ST FLOOR OR REDUCING THE SIGNAL (12 Students)

GC, Female, Early 20s (DOE3B-1) *"As so many people are feeling symptoms I think the router should be installed [on] the first floor instead of the second. Especially since no one uses the wireless on the 2nd floor. Also the connection on the 1st floor is awful."*

TN, Female, Early 20s (DOE3B-1) *"In my opinion, UCN should reconsider how it installs wireless routers. Most of the people in UCN work with this device. I think that routers should be relocated and only cover a small area. I began to realize that the damage from electromagnetic radiation is noxious to our health. The idea is to use a conventional network, but most people need the wireless. That is the dilemma."*

GV, Female, Early 20s (DOE3B-2) *"UCN should have a WiFi zone away from the classrooms and computer labs not on the same floor that students have classes and in the labs UCN should have wired connections."*

LJ, Female, Early 20s (DOE3B-2) *"The English Department should change the WiFi router to the first floor because that is where we use it to do our homework."*

OC, Female, Early 20s (DOE3B-2) *"I think that the English department should seriously consider the idea of putting the new router downstairs in the P's first floor because this could be very fruitful for all of us. First for the students, because in my case, I hope Professor Doyon stays here... and on the other hand for the rest of the professors because there are a huge number of students that never pay attention to them in classes – so if there were no powerful signal, they would not be on the Internet during classes."*

PM, Male, Early 20s (DOE3B-2) *"They (School of English) should use WiFi when it's necessary. There is no need to keep it online when no one needs it. Changing to wired Internet will not be a good business for the school because they'll have to pay more for maintenance. They need to turn it off when no one is using it."*

JM, Female, Early 20s (DOE3B-2) *"It would be a good idea to turn off the router when no one is using them. But the problem is that there is always someone using WiFi here and we're paying for it. Maybe the solution could be to make the intensity lower, but now it is not so good so it would be worse."*

MM, Female, Early 20s (DOE4) *"A solution could be that they reduce the power of the signal when a few people are using it and when no one needs it, they could simply turn it off. Also they could implement a special building in an isolated place just for working."*

BC, Female, Early 20s (DOE4) *We should get a new one with lower WiFi but we still need WiFi for doing work at school We sometimes need to do homework, working on our thesis and we need WiFi to be looking for information."*

VJ, Female, Early 20s (DOE4) *"First, I have to say that the symptoms that I circled above I can't be totally sure about if they are produced just because of microwave exposures. The reason for that is that I have been studying a lot so maybe the headaches, fatigue, and vision problems are because I'm just tired. So, I have never had any problem that goes beyond being tired. So, I think that this doesn't have anything to do with microwave exposure. Second, I think that the university needs to have a WiFi Internet, because that WiFi Internet is very useful for the students. I think that WiFi shouldn't be removed. I think that the problem is because of the companies that sell WiFi Internet. So, they have to figure this problem out by providing people safer WiFi Internet. I am totally positive that some day activists will win their fight against non-safe WiFi, but in the meantime, I think that it is needed. So one thing that can be done is to move the powerful WiFi system installed on the second floor to the first floor. But WiFi Internet for me is needed."*

MS, Male, Early 20s (DOE3-2) *"I would not change the WiFi system because I need to connect and survey in different places. However, I would decrease the waves of wireless that affect us. Also, here in school of English, we can install big computers for all people that want to go online."*

JVM, Female, Early 20s (DOE3-2) *"I would not change the WiFi system because it helps me to connect and navigate the Internet, and I think that the Internet is an important tool here at the university because we can search for information or homeworks that help us in this course. Maybe a solution can be that university make the intensity lower. But everybody needs Internet now to do their homeworks, specially here in the university."*

FOR KEEPING THE WIFI SYSTEM AS IS (4 Students)

LR, Male, Early 20s (DOE3-2) *"I don't know what the School of English should do because we need the WiFi connection to do our homework and research."*

NA, Female, Early 20s (DOE3-2) *"I think the WiFi is a very bad thing. Nevertheless, we cannot do much because we need Internet while we are studying at university. I'm aware of the danger this brings to our bodies but I don't really know how to change people's minds about this new technological society."*

MC, Female, Early 20s (DOE4) *"I really don't know because although I think that WiFi system is dangerous and damaging for us, it is also very helpful to students."*

RY, Female, Early 20s (DOE4) *"Although it is dangerous, it is almost impossible to get rid of it, because it is everywhere."*

OTHER (5 Students)

CG, Male, Early 20s (DOE3-1) *"I think people need to talk a bit and try to communicate in order for problems to be solved."*

EV, Female, Early 20s (DOE3B-2) *"To be honest, I am not sure if my 'symptoms' are from the antenna. I think they are from the stress I am experiencing and that has to do with the exams and homework that we have to do. I don't know what the university should do about the antenna. They don't listen to their students anyway."*

MC, Female, Early 20s (DOE3B-2) *In my opinion, I didn't know about all the problems that WiFi can cause in our body and in our physical and psychological system. But now that I have seen all these movies and the professor has told me about that, I think that obviously WiFi is a dangerous system, especially for children."*

GL, Female, Early 20s (DOE4) *"The School of English and all schools should be aware of the consequences of everything they use. What this school should do is implement safe devices. I don't know what else. They must have the will to do things well. Otherwise nothing will happen."*

GC, Female, Early 20s (DOE4) *"Maybe the school has to evaluate the benefits and the disadvantages of having a powerful WiFi device. I can't say if it is good or bad because I don't have the necessary evidence of the effects of this new system, but if a lot of students are having symptoms it is necessary to investigate about it and then make a decision."*

Conclusion

Thousands of studies conducted from the late 1960s (since over 40 years ago) have shown biological effects, many of which demonstrate both correlation and causation for the symptoms the above students are experiencing regardless of whether these students are aware of these studies or not. The majority of the students surveyed are experiencing adverse symptoms and also believe that the School of English should switch from wireless to wired Internet connections because they believe – with good reason – that the new WiFi system may very well be damaging their health.

What the School of English and UCN will do remains to be seen.

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