

# **The Impact of Online Health Education on Improving Poor Posture Perception Among College students**

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## **Introduction -Aylin**

It is common to see that many people practice poor posture habits during different stages of their daily lives without knowing that it might have negative effects on our general health. It is especially an issue among young adults who are required to stand, sit, and look down at their smartphones for prolonged periods. According to an article on Harvard Health Letter (September, 2018), "it's a common and important health problem among Americans, and it can lead to neck pain, back problems, and other aggravating conditions". Knowing that it could lead to serious conditions if not addressed properly, the question that we seek to answer in this study is "Can educators increase the perception of healthy posture practices among college students?"

Although it is known that adopting healthy practices is important to ensure good posture, little is being done to promote it. Considering this, we decided to make use of media and

technology in order to promote good posture practices among college students and to change their perceptions about it. Over the course of this study, we would like to explore how online health education can be utilized to raise awareness and lead to positive change in improving posture. Throughout this research report along with the quantitative data gathered from surveys, we seek to analyze the effectiveness of implementing technology for health education with this particular purpose.

### **Research question - Eman**

“What am I doing to promote good posture, and what can I do to change perceptions of both good and bad posture?”

### **Literature Review - Eman**

Nowadays, people suffer from poor body posture. According to Child and Youth Health Network, posture is "the manner and position in which your child holds his head, neck, back, and spine, as well as his arms and legs, when standing, sitting or lying down" (WCHN, 2016).

#### Causes of poor body posture

Poor body posture usually results from a combination of physical and environmental factors, such as having a poor ergonomics while working on a computer and overuse of electronic devices such as smartphones (Alattas, 2014). Also, according to the American Chiropractic Association, children may develop bad posture from carrying an overweight backpack (Brzek et al., 2017). Also, according to the American Academy of Pediatrics, poor posture could happen as a result of youth or individuals stooping to blend in with shorter peers.

Poor body posture could result from weak abdominal and back muscles, often due to underuse and lack of physical activities. Child and Youth Health report that good posture can be achieved by keeping the joint and bones appropriately aligned to minimize the strain on the back muscles and joints (WCHN, 2016).

It is still unclear why poor posture is widely noticed among individuals nowadays. Do the recent changes in the populations' socioeconomic status has a key role in increasing the incidence rate of poor posture? Is it the medical accessibility services that helped in discovering a hidden and already existing problem? Or is it the lifestyle changes and technology usage in appropriately which caused the increase in the poor posture rate? Do the posture problems have the same features in the USA as a developed country compared to Jordan as a developing country? Is it a myth that social stigma affects the level of posture care among Jordanian females?

Epidemiological studies have been done to identify the major types of body posture. Researches commonly divide the posture problems into two categories; UCS and LCS.

Upper Crossed Syndrome affects the body posture and mechanics of Cervical spine and shoulder girdle resulting in the upper quarter and neck pain(Gu, Hwangbo, & Lee, 2016; Kreighbaum & Barthels, 1996). A study has shown postural changes in shoulder girdle related to UCS, where people with UCS had more scapular anterior tilting and internal rotation of the shoulder joint compared to people who are not affected by UCS. Also, people with UCS had low levels of serratus anterior muscle activity during the loaded forward flexion task (Charles A. Thigpen, 2010).

An epidemiological study has been done on the prevalence of UCS among young adults. A study was conducted by Mubeen and Colleagues in the year 2016 in Pakistan to find the prevalence of UCS among medical students who were between 17 to 25 years old at Lahore University. The results indicated that 48.7% of the students have neck pain. Also, it revealed a high prevalence of UCS among students. In the same study, they found that 66.8% of subjects were found to have poor studying posture. The study revealed that poor studying posture could be a leading factor to UCS (Iqra Mubeen et al., 2016).

On the other hand, Lower Crossed Syndrome (LCS) is a disorder characterized by postural changes in pelvic alignment and lower back associated with changes in spinal curves. These postural changes happen due to muscle imbalance. LCS results in low back pain, musculoskeletal pain, poor posture, and poor body balance. The Prevalence of LCS has not been studied in Jordan, and there is no program developed among schools to limit the incidence of LCS.

Das and Colleagues studied the prevalence of LCS among young adults with gender consideration. They found that LCS has a higher prevalence among females compared to males, where 30 females out of 83 volunteers and 14 male out of 117 have LCS (Shriya Das, 2017).

Dhanani and Shah studied the prevalence of LCS among young females. The results revealed that 85% of the young female has LCS (Sneha Dhanani, 2014). This study indicates a high prevalence of LCS among females. With the mentioned prevalence, we expect younger females to have low back pain that interferes with their activities of daily living.

## The community burden of the problem

A study had been conducted in Australia from 2006 to 2011 on the financial burden of treating musculoskeletal conditions in Australian children and adolescents. It revealed that treating the postural and musculoskeletal problems can present a significant burden on the health system as the rate of musculoskeletal problems increased significantly with age among children and adolescents into their way to adulthood (Nicholas Henschke, 2014).

The healthcare cost due to head and trunk pain (headache, back pain, chest pain, and abdominal pain) ranged between \$261 to \$300 billion in the United States in the year 2010. It was higher than the annual costs of heart disease (\$309 billion), cancer (\$243 billion), and diabetes (\$188 billion) and nearly 30 percent higher than the combined cost of cancer and diabetes (Gaskin & Richard, 2012). Besides, there are many long term consequences for UCS including balance disorders, lung problems, migraine, cardiovascular conditions, digestion problems, and the psychosocial and problems (Erik Peper, 2012; Kang et al., 2012; Leap, 2018).

The relationship between postural defects and their risk factors is a new area of research. Therefore, a little literature was found on this worldwide. In spite of the importance of the topic, there are no published studies or reports on the prevalence, due to that, there is not enough public awareness about the healthy body posture and practices not only in Jordan but even worldwide.

A study was conducted to find the effect of low back pain on the quality of life and psychological status among school children. They found that low back pain affects the quality of

life and psychosocial status negatively in both genders. However, they found that the female was more affected than male by back pain (Macedo et al., 2015).

Another study was conducted to find the prevalence of neck and shoulder pain among high school male students in Korea. A high prevalence of neck and shoulder pain (NSP) was reported among high school children, where 79.1% of the students report NSP. Also, the average sitting time was  $10.2 \pm 2.7$  h/day with 59.0% did not sit upright. Only 11.9% of students reported that they stretched regularly throughout the day (Koh et al., 2012). This indicates possible relationship between sitting time and posture with NSP.

#### The Role of Technology in Health Education

The internet, and as a result, mobile devices, apps, and social media have widely become our number one go-to resources when seeking information about health; and young people are no exceptions. In a study exploring the role of apps and wearable devices (fitness apps, Fitbit, etc.) in young people's learning about health, Goodyear, Armour, & Wood (2019) conducted a project involving 245 young people aged 13-18 in UK schools focusing on their use of technology related to "physical activity, diet/nutrition, body image and sleep". Their data showed that young people used these devices and apps not only to seek answers to health related questions but also to get easy, efficient and personalized content as well as engaging social content.

In a different study conducted at a school in the UK on whether posture education is effective on children aged 11-12 years, the researchers came up with the conclusion that when the children were provided with computer-based on-screen intervention to encourage good posture habits while using computers at school, the positive changes and the reduction in pain

were significant compared to the situation before the intervention (Robbins, Johnson, & Cunliffe, 2009).

When it comes to the specific topic of encouraging good posture, the available technologies today keep emerging. Wearable devices such as Lumo Lift and UpRight, mobile applications such as MacBreakZ and Posture Man Pat are all examples of how technology is contributing to improve this common problem (Blackman, 2017).

### **Methods - Iris**

The purpose of this research is to find ways of helping others, especially college students, to correct their poor posture by improving their awareness of proper ergonomics. The primary method for achieving education among people with poor posture is to expose them to learning materials such as YouTube videos and Public Service Announcement (PSA). These materials can be used to explain the correct practices to maintain a good posture.

Two surveys were conducted in conjunction with an educational YouTube video. Survey participants were instructed to watch the first video, identified as the pre-video survey. Survey participants were then instructed to watch a posture awareness video. The second survey, identified as the post-video survey, is taken after watching. Both the pre and post surveys measured the effect that watching one YouTube video had on the perception of poor posture among the college students.

### **Subjects - Eman**

A variety of participants were polled when conducting the two surveys (pre & post video surveys). Primarily, CSUSB students from undergrad and grad programs were invited to participate in the research, as well as collegiate students from other learning institutes. Subjects who participated were expected to be healthy and primarily between the ages of 18-35 years old; although some were slightly older (18%). Subjects will be excluded if they have a congenital musculoskeletal deformity, a history of spine injury, or being diagnosed with disorders that affect normal growth.

### **Data collection and analysis - Iris**

Before exploring possible options to the following question, “What am I doing to promote good posture, and what can I do to change perceptions of both good and bad posture?” a need for intervention must first be justified. One way to determine a need for intervention, is by representing a targeted audience through a collection of data.

A total of seventy-five students were surveyed. Each of us (Eman, Aylin, and Iris) found college participants among family, friends, and students. Eman and Aylin both had their students partake in this research. I currently do not teach in a collegiate environment, but I do know several people who are college students.

They were asked to complete a pre-video survey, watch the video, *The Benefits of Good Posture* (YouTube), about good posture practices and the benefits of having good posture, then asked to complete a post-video survey in order to measure awareness of false perspectives and the need for change as well.



Prior to watching an educational video, participants were asked the following questions:

Pre-video questions

1. Age?
2. Gender?
3. Do you think you have a healthy posture?
4. Do you know the definition of good posture?
5. Do you practice healthy posture?
6. Do you suffer from back pain, headaches, fatigue?
7. Do you think that poor posture can affect your general health?
8. Do you think posture is getting worse with society?
9. Do you know how to center your body?
10. Do you think good posture is important?

After watching the video, pollers were asked a similar set of questions:

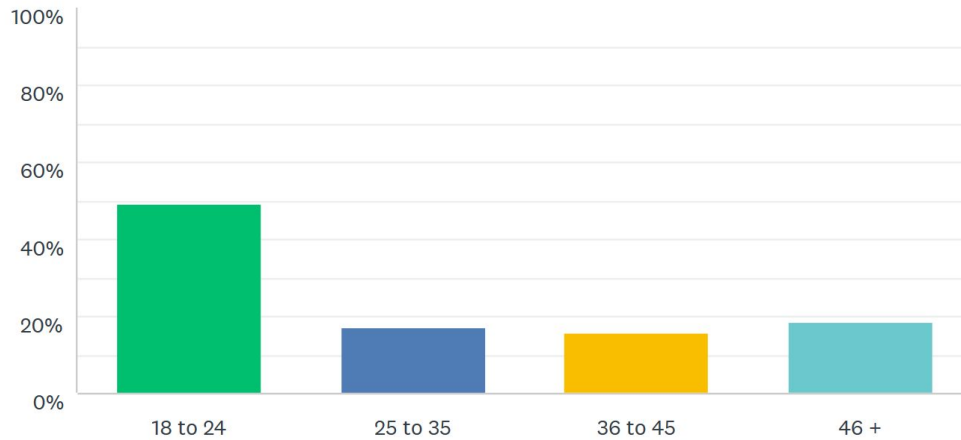
Post-video questions

1. Did you find the video helpful?
2. After watching the video, do you think you have a healthy posture?

3. After watching the video, do you now know the definition of good posture?
4. After watching the video, will you practice healthy posture?
5. After watching the video, do you think bad posture can cause you back pain, headaches, & fatigue?
6. After watching the video, do you know that poor posture can affect your general health?
7. After watching the video, do you think posture is getting worse with society?
8. After watching the video, do you now know how to center your body?
9. After watching the video, do you know how important good posture is?

Ages of the participants ranged from ages eighteen to forty-six and up. Ages eighteen to twenty-four accounted for 49%, twenty-five to thirty-five accounted for 17%, thirty-six to forty-five accounted for 16%, and forty-six and up equaled 18% of those who were surveyed. Females clearly dominated the research by comprising 75% of total participants.

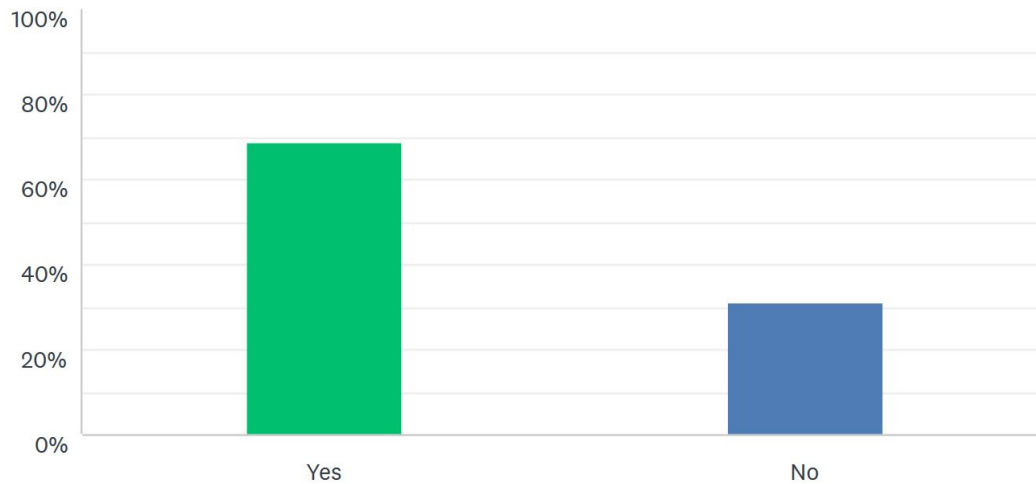
### What is your age range?



What possibly seemed to be the most surprising for me was that 60% felt they were not practicing good healthy posture, and this perception was further confirmed with the post-video survey results. When asked, “After watching the video, do you think you have a healthy posture?” 68% admitted to not practicing healthy postures, and 97% confirmed that video was beneficial to watch. These results alone can be enough reason to justify the need for health education that would benefit not just college students, but all people in general.

Pollers were asked if they knew the definition of good posture, and 69% felt they did.

### Do you know the definition of good posture?



After watching the video, they were asked again if they now know the true definition of good posture and they overwhelmingly agreed (98%). The same amount of participants also agreed to intentionally change their habits by practicing good posture. Ninety-six percent also believed that bad practices can indeed lead to “back pain, headaches, & fatigue” and poor health in general, which 68% felt they suffered from. Additionally, the pre-video survey showed that 84% thought posture was becoming worse in society, but this percentage largely increased to 92% after watching an educational video. Ultimately, 100% of surveyors all agreed they understood the importance of having good posture.

### **Conclusion & Recommendation - Aylin**

The findings of this study showed that although the participants in the surveys are not practicing ideal postural behaviors, they are already aware of this fact, and we can conclude that raising awareness is quite possible by using educational videos and public service announcements. We used an animated educational video on Youtube for the purpose of this

study, and it proved to be effective in changing perceptions and raising awareness to adopt positive behaviors to improve posture.

The participants in this study consisted of mainly female students (75 %), but we think that gender doesn't play any significant role. However, a study involving equal numbers of male and female participants might yield more accurate results. Also, looking at the various ages of the participants in this study and similar studies cited in the literature, we can say that the issue of bad posture is not specific to any age group, everyone is susceptible to this problem if proper intervention methods are not in place.

The educational video used in this study is also important to note as 97 % of the participants reported that it was beneficial to watch the video. We, instructors, sometimes find ourselves in a class where students are busy reading, taking notes, working on a paper, or using their smartphones or computers in a body position that is not described as healthy posture. Verbally reminding the students to sit up straight and get in a good posture is clearly not an effective option compared to providing the same message with an interesting video in which they can read, hear, and see what is really meant by good posture and what consequences might come up if it's not practiced well.

To conclude, we feel that this study answered our question of whether we can raise the awareness of our students regarding poor posture by using the available media and technology. However, further actions such as a follow-up survey or an interview asking whether they really practice what they learned or what changes they are making now to improve their posture several weeks after watching the video might provide a bigger picture.

## **Iris' Reflection**

I myself suffer from poor posture practices, and I feel that these poor practices continue to worsen as I become older. When I was a young person in her twenties and thirties, I always considered myself to have good posture. I stood and sat up straight with my shoulders back; however, through the recent years of earning my degrees I could see that my posture is not as rigid as it once was due to the many hours spent in front of my computer. When my classmates and I first discussed our possible research questions, I thought this topic was very interesting. It almost seemed to be too obvious of a problem and too obvious of a solution. It was not until after I conducted the survey that I realized the severity of the problem caused by false perceptions.

Many college students spend hours in front of their devices in order to complete coursework. I would like to think there is a general understanding that good posture is very important even if we do not practice it. Yet, many of us continue to slouch further and further forward and refuse to do little to rectify our posture. What I found to be even more shocking was the fact that I was not alone with my perceptions, and many other students thought the same as I do.

We know that good posture is important, but we do not know exactly how important it is. Generally, half of us assume to know the definition of good posture, yet, after watching the video, many of us realized our perceptions were wrong. And, we all agreed to make a change in

order to improve our health and our lives. Overwhelmingly, pollers saw these issues to only be worsening. Perhaps this last factor seemed to be the most shocking to realize?

Students need to be reminded of the importance of their health. A simple application or a reminder of sorts can accomplish this. Feathers, Rollings, and Hedge of Cornell University researched alternative technological designs, such as mouse and computers, that would better serve college students aged eighteen to twenty-five, who suffer from poor musculoskeletal symptoms (2012, p.115). Their new mouse designs offered alternative movements and postural strategies to would potentially alleviate musculoskeletal stresses found among students. Efforts such as this is definitely a step in the right direction, but even more can and should be done to help the problem. Recurring reminders should alert students to sit, stand, and walk appropriately. For example, my smart watch notifies me when I sit for too long, or congratulates me when I have taken so many steps in a day. We each have our smart devices, and I would like to remind students to use them for encouragement to not only be active, but to practice proper ergonomics as well for the sake of their health.

### **Aylin's Reflection**

This reflection paper is intended to document my overall experience working on this interesting and informative research topic, and I am going to include some key content from my own reflective logs posted on BlackBoard. Having taken a graduate level course at a university in Turkey 6 years ago, I had an experience doing an action research on “the teachers’ use of classroom language and code-switching between English and the students’ native language”, so I’m pretty familiar with how an action research looks like, but working on a new topic made me

feel like I am doing it for the first time and I found the textbook (Mertler, 2017) of great help during the process.

I personally have found the topic of having and maintaining a good posture really interesting and wanted to have more information as I was working on it. Most importantly, working as an ESL instructor at an adult learner setting, I have to cover this topic in our curriculum under the “Health” unit in our textbook, and I know students are also eager to learn more. The textbook offers only a short paragraph about it, and I always felt the need to enrich my lesson with something that will be more engaging and effective than the mere text and my superficial knowledge about it.

Initially, I was thinking of sharing both the video and the surveys with my adult learners on Google Classroom, the platform we frequently use to share classwork and relevant resources. Then I thought it would be better to do it in the actual classroom as it would lead to more interaction and would turn into an engaging mini lesson, something that was lacking when our topic is health related in the classroom. The video proved to be very effective and all my students reported that they found it really useful. The data from the surveys also indicate that.

My main take-away from all the readings and this research process is that technology, especially mobile applications, social media and YouTube are really effective tools for formal and informal learning. In this research our topic was about health, but I am sure if we, the teachers, can utilize them effectively and in a structured way as part of our instruction, we can achieve better learning outcomes no matter what subject we teach.



This experience has given me better insights into my classroom and students, and encouraged me to learn more and make a collection of videos and other online materials relevant to the topics I need to cover in my class. I have already started to explore Ted-Ed website for similar videos on other topics. As a graduate student majoring in Instructional Technology, I truly understand that technology is there to help us in our efforts in making learning effective and meaningful.

### **Eman's Reflection**

The main objective of our project is to work on educational material that is simple, reliable, and applicable, which can be presented and taught to college students. Our project will help in developing and implementing future programs and strategies to assist in maintaining body posture among college students and further people to reduce the occurrence of musculoskeletal pain followed by productivity losses.

The prevalence of poor posture among CSUSB students, its associated risk factors, and the students' perception of this topic still need further studies and researches to reach reliable statistics. This is not the first time I work on such a project. I am a team member of a research group in Jordan which is lead by a professor who is working on posture projects for the youth in the region. His experience and knowledge will enrich my experience in the field of posture wellness.

I believe that our project has a great potential that can be taken to a higher level. No research had been conducted about this topic regardless of its' importance. Moreover, many

health wellness organizations are considering this topic as a new epidemic that needs our attention and care.

Our group members, Aylin, Iris, and I worked hard on formulating and establishing the literature and the methods within a short period of time, but the final results and outcomes were very interesting, which made us forget the stress we went through.

The limitations that our group faced were:

1. The time, I feel that if we were able to start from the beginning of the quarter we might be able to reach out to more participants to have a representative sample for the CSUSB campus
2. Limitation in the sampling process, gain due to the time were were inviting anyone who were able to take the survey. More time would allow us to have a reliable sample from the different colleges of CSUSB
3. Limitation in the resources. Our group had to use the free version of SurveyMonkey which does not allow the features which we needed for a better and more effective data collection process.

Regardless of the above mentioned limitation, I feel that our team members conducted all the working stages starting from formulating the research question, research design, data collection, data analysis to writing the paper successfully. We ended up with more than a research report, and I would like to take this work forward to be a potential research paper to present and publish.

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## **Summary**

Aggarwal, Anand, Kishore, Jugal, and Gopal researched the effects of sitting for long periods of time had on students. They found the most common orthopedic problem nationwide to be low back pain (LBP). LBP affects both younger and older students. Additionally, the pressure of stress and time constraints of consuming curriculum caused students to be predisposed to not just LBP but other conditions as well. Researchers noted there was some correlation with the impact that other activities had on students, such as:

- Poor study habits
- Lifestyle habits
- Psychological factors highlight a need for life skills training
- Education
- Counseling
- Restructuring of the medical curriculum (2013, n.d.)

Regardless of correlations among other activities, one common factor with LBP remained sitting for long periods of time.

## **Assessment**

A study was conducted among students in a medical college located in Delhi. The participants were randomly sampled among undergraduate medical students between the ages of 17-25. A validated questionnaire was used to collect the data.

## **Reflection**

This study found that there was little correlation between LBP and students who were healthy with healthy weights and lifestyles. Instead, it was found that LBP was associated with poor study habits, as well as psychological factors that educate life skills, enhance knowledge, and affirm medical necessities. The findings of this research helped to substantiate our claims that college students spend many hours completing assignments while practicing poor ergonomics.

2. Bert, F., Giacometti, M., Gualano, M. R., & Siliquini, R. (2013). Smartphones and Health Promotion: A Review of the Evidence. *Journal of Medical Systems*, 38(1).  
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## **Summary**

Communication using mobile phones and apps became an essential tool for health workers. The paper studied how the patients and health workers are using mobile phones in health promotion. The researchers reviewed 472 articles and identified 21 articles concentrate on health promotion. It covered the health promotion in nutrition, physical activity, and lifestyle improving suggestions.

This research results were evaluated in order to reach the best method in health promotion using the mobile health and electronic health in the different fields; nutrition, lifestyle, physical

activity, health in elderly, transmitted sexual disease prevention. More details about how health promotion using the smart devices and mobiles in each field were discussed in depth in the paper (Bert et al., 2013)

### **Assessment**

The beauty of this article that it came out with more than 4000 paper and deleted all the duplicated data then classified it according to the field of scope. I think that this paper is very comprehensive and has many potentials to help understanding the perception of the m-health and telemedicine. However, this paper used only the completely open resources. They excluded articles in any language besides English and German. The author also did not have any specific criteria for the included papers' population. The strength in this article is large sample size, but I think one the inclusion and exclusion criteria limited the ability for generalizing the results.

### **Reflection**

I found this paper very helpful in understanding the current position of the e-health promotion. The topic that had been included in the study might be very broad and limited, but as the field of research is still new and need further study. Randomization needs to be added to any further project in about the web health to reach better and more accurate data.

3. Bopp, T. (2019). Moving Beyond the Gym: A Content Analysis of YouTube as an Information Resource for Physical Literacy. Retrieved December 3, 2019, from <https://www.mdpi.com/1660-4601/16/18/3335>



## **Summary**

In this study, the researchers seek to “assess the content, exposure, engagement, and information quality of uploaded physical literacy videos on YouTube”. They collected 300 YouTube videos and sorted them by “title, media source of upload, content topics related to physical literacy, content delivery style, and adherence to adapted Health on the Net Foundation Code of Conduct (HONcode) principles of information quality”.

## **Assessment**

The data from this study shows that the overall quality of these videos are satisfactory and the internet, especially YouTube, has the potential to enhance physical literacy information for everyone.

## **Reflection**

I think this study is closely related to our method in that we use a video available on YouTube although the video was originally created on Ted-Ed for educational purposes. Still, this study proves that technological media can be used to inform and enrich what we know about health-related issues.

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## **Summary**

Mobile applications technology is an expanding field. Public health and health care started to use the applications of the mobile to promote health among the different populations. The paper is using a systematic review to summarize the usefulness of this type of technology in improving health and health care services.

Mobile health (m-health) had been under investigation to reach to proper and effective ways to promote health by improving diagnosis, investigation, treatment, intervention, monitoring and management of the different diseases.

The authors used a systemic comprehensive method to search for controlled studies starting from 1990 until current using terms that is related to technology and health such as; mobile health, personal digital assistance, portable assistant, and games. The paper ended with a recommendation and guidelines for future work in mobile health intervention and usage (Free et al., 2010).

## **Assessment**

The investigators excluded “health” word from the terms which was used during the web search. The reason behind that was to make sure that the paper about the app will be spotted manually if it is health related or no. I found this point is not necessary as many apps for health services may

include word “health “within its name. Another point of weakness that the researchers included any app that provided even one health service. This inclusion criterion may reflect false data about apps that cannot give a real health promotion or effective health care services. And I see that authors should made the minimum amount of the health service provided via the studied app more than one in order to save the money, time, effort, and to reach out to reliable results that can be used for further investigations.

### **Reflection**

Mobile health applications may be able to provide a better health information and services as it can be customized according to the health need for each individual patient. However, it can be a dull and un-interactive method of communication between the patient and the health care provider. I may suggest that if a health provider would like to relay on mobile app to promote health and monitor patients status, he/ she should find a way of interaction either by using voice accessibility, messaging features, rewarding system, or any other two ways communication even if

5. Goodyear, V. A., Armour, K. M., & Wood, H. (2018). Young people learning about health: the role of apps and wearable devices. *Learning, Media and Technology*, 44(2), 193–210. <https://doi.org/10.1080/17439884.2019.1539011>

### **Summary**

This article is about the use of health-related apps and devices among young people. The researchers conducted a study with 245 young people aged 13-18 and tried to find out which

mobile applications and devices these people used and why. The data showed that they are influenced by their peers, family, PE lessons and sports when choosing the apps. Their reasons to adopt a specific tool include ease of use, efficient and personalized content as well as engaging social content.

### **Assessment**

Participants included 245 young people with ages ranging from 13–18. All surveyed attended 10 UK schools located in the West Midlands and the South of England. All schools were found within socio-demographic areas, with a wide array of ethnic backgrounds. I think this citation is useful as it is closely related to the use of technology in learning about health which is one of our main concerns in this research report.

### **Reflection**

This citation is pretty up-to-date (2019) and gives me an idea of what devices and applications are being used by young people concerned about their physical well-being. An interesting point here is that when these tools have some socially engaging value such as FitBit, they are more commonly adopted. Poor posture practices often start with young students, and these practices could possibly continue for the remainder of their lives. By the time students arrive at college, they have become accustomed to sitting or standing for long periods while using their technological devices. In our study, we surveyed collegiate students, but of course the use of good ergonomics should start as early as possible.

6. Harvard Health Publishing. (2018, September 1). 3 surprising risks of poor posture - Harvard Health. Retrieved December 2, 2019, from <https://www.health.harvard.edu/staying-healthy/3-surprising-risks-of-poor-posture>

## **Summary**

This article posted by Harvard Health Letter in 2018 without any specific author name states how poor posture is a common problem in the United States and what other health problems it can lead to. According to the article, poor posture may result in incontinence, constipation, heartburn, and slowed digestion. It also provides some tips on how to improve poor posture with simple physical exercises.

## **Assessment**

This short but informative article tells us more about specific problems associated with the main concern of our research; how to improve poor posture, as well as some tips.

## **Reflection**

Not knowing much about the negative effects of poor posture, I had a chance to learn that the problem is much more serious than I was thinking before I read the article.

7. Kamaroddin, J. H., Abbas, W. F., Aziz, M. A., Sakri, N. M., & Ariffin, A. (2010). Investigating ergonomics awareness among university students. *2010 International Conference on User Science and Engineering (i-USEr)*, 296–300. <https://doi.org/10.1109/iuser.2010.5716769>

### **Summary**

Kamaroddin, Abbas, Aziz, Muhamad, and Ariffin researched the importance of proper ergonomics with computer usage. The study found the need to avoid ergonomic risks and illnesses, as well as the need to bring about ergonomic awareness among college students. Their data also collected evidence regarding students' prior knowledge about good ergonomic practices. Sixty students were surveyed, but only half understood the true definition of good posture. These researchers found the need to provide students with information and the use of technological tools to create ergonomic awareness, and reduce ergonomic risks.

### **Assessment**

A questionnaire was distributed among sixty university students. A significant association was noted between students who attended a health course and having some knowledge of proper ergonomics.

### **Reflection**

Regardless of proper ergonomic awareness, students continued to practice poor posture. The study was similar to our claims in that all students can acknowledge there are good and bad practices, yet they fail to comply with good practices even at the stake of their own health.

8. Kreighbaum, E., & Barthels, K. M. (1996). *Biomechanics: A Qualitative Approach for Studying Human Movement* (3rd ed.). Amazon: Allyn and Bacon.

## **Summary**

Yuan-chun, Xiang-ming, and Xin surveyed college students regarding their cervical health risks among college students. The results of significant cervical sub-health found that sitting posture, in addition to poor sleep and lack of physical exercise, was negatively impacted. Students who studied in liberal arts and science were both surveyed, but the results remained the same. Both groups were impacted by poor posture in addition to lack of physical activities.

## **Assessment**

A 2026 grade-one college students and 200 grade-one graduate students of a comprehensive university were surveyed with a self-made questionnaire.

## **Reflection**

It was discovered that many of these students many of these students suffer from poor sitting posture, as well as poor quality of sleep. These students surveyed also admitted they were unaware of how to relieve neck pain caused by the use of computers. If these students were more aware of simple posture practices, they could suffer from less fatigue. Authors of this study

found that college students suffer from poor posture and had little to no knowledge of how to remedy this.

9. Norman, C. D. (2012). Social media and health promotion. *Global Health Promotion*, 19(4), 3–6. <https://doi.org/10.1177/1757975912464593>

## **Summary**

The article is talking about how social media transformed the way of communication among individuals. It also discussed how social media impacted the society and changed the way of interactions. One of the areas which social media participated in changing it is health promotion. Facebook, Twitter, and YouTube are getting accessed every day by billions of users all over the globe. The main reasons behind the high level of usage are; easy to use, accessibility for group usage, and cheap to use. The paper not just discussed how social media affects the health promotion, but it went beyond to think about the relationships that it can be created and its effect on health(Norman, 2012).

## **Assessment**

The author concentrated on the positive aspects of using social media as a health promotion too, but he did not concentrate on the negative aspect except for the final closure paragraph.

On the other hand, the paper summarized some effective ways to be used in order to reach the right audience while scoring higher levels of acceptance among the targeted audience. The author also gave a comparison between the classic media vs. the modern social media which I found helpful and rare to find nowadays among the digital, web, and electronic health promotion research papers.



## **Reflection**

Digital health, electronic health, web health, or any other form of the technological form of the health promotion is a field that needs to be discussed and studied. It is a reality that in away or another we will be utilizing the distance health care.

Another point that I noticed a discrepancy in while I was working on this assignment, that public health and education advocates should set up a plan to meet the urgent need to compensate the literacy gap among the different generations and to accommodate the digital health to be accessible by the senior population. Digital health is a very helpful tool for everyone, but still not everyone is able to utilize it.

10. Norman, C. D. (2012). Social media and health promotion. *Global Health Promotion*, 19(4), 3–6. <https://doi.org/10.1177/1757975912464593>

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11. pubmeddev. (2013). Alternative computer mouse designs: performance, posture, and subjective evaluations for college students aged 18-25. - PubMed - NCBI. Retrieved December 3, 2019, from <https://www.ncbi.nlm.nih.gov/pubmed/23241688>

<https://content.iospress.com/articles/work/wor01487>

## **Summary**

Feathers, Rollings, and Hedge found that students who contend with the demands of heavy workloads with class assignments each week, compiled with extensive use of technological devices, suffer from an increased amount of musculoskeletal symptoms. These creators conducted their research in order to substantiate the need for innovative technological devices, such as the computer's mouse. Feathers and co-authors surveyed college-aged students (18-25) and discovered the physical impacts that wrist movements, hand posture, and back posture had on college students and felt that an innovative mouse design would have a positive physical impact for the participants and help avoid potential musculoskeletal risks.

## **Assessment**

College students between the ages of 18-25 were surveyed for this study, and this data was collected to support the claim of this group that innovative mouse designs will help to relieve medical conditions associated with long-term use of computers. Data was collected through a series of questionnaires while they participated in a before, during, and after mouse use trials.

## **Reflection**

This study was a resource that emphasized the need for better ergonomic practices. It substantiated our claim that college students do suffer from pains that are manifested in many ways. The solution for better practices in this study found that improving the design of a mouse was a good step in the right direction.

12. TED . (2015, July 30). The Benefits of Good Posture [YouTube]. Retrieved from <https://www.youtube.com/watch?v=OyK0oE5rWFY>

### **Summary**

This video lesson was created by Murat Dalkilinç and animated by Nadav Arbel. It illustrates how beneficial good posture is, not just for the sake of our back pain, but for our general health as well. As society continues to become more and more dependent on technological devices, such as smart phones and computers, their posture also continues to worsen. Countless hours spent in front of the computer can often lead to poor ergonomics, headaches, fatigue, and back pain. This video lesson educates viewers with the importance of sitting and standing correctly, the correct definition of good posture, and how to center one's body and benefit from good posture.

### **Assessment**

There are data or surveys to support health claims made within this video. Instead, it suggests that studies have made suggestions regarding good posture.

### **Reflection**

This video is at the centerpiece of our education; it is a great resource for any student of any age. It is fun and entertaining to watch, so any aged student would enjoy watching it.