

The Impact of the Long Lockdown Period Due to Covid -19 on Education among School Kids-A Survey

Pravalika,

Saveetha Dental College and Hospitals,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Chennai - 600 077, India
Email id:151901091.sdc@saveetha.com

R Gayathri,

Assistant Professor,
Department of Biochemistry,
Saveetha Dental college and Hospitals,
Saveetha Institute of Medical and Technical Sciences (SIMATS),
Saveetha University, Chennai -600 077
Email Id: gayathri.sdc@saveetha.com

Gifrina Jayaraj,

Reader, Departments of Oral Pathology,
Saveetha Dental College and Hospitals,
Saveetha Institute of medical and Technical Sciences,
Saveetha University, Chennai- 600 077
Email Id: gifrina@saveetha.com

V. Vishnupriya,

Professor ,Department of Biochemistry,
Saveetha Dental College and Hospitals,
Saveetha Institute of Medical and Technical Sciences(SIMATS),
Saveetha University, Chennai-600 077
Email Id: vishnupriya@saveetha.com

***Corresponding Author:**

R Gayathri

Phone no: +91 97106 80545

Email ID: gayathri.sdc@saveetha.com

Address: Department of Biochemistry ,Saveetha Dental College and Hospitals ,Saveetha Institute
of Medical and Technical Sciences. Saveetha University, 160, Poonamallee High Road , Chennai
600 077

Tamil Nadu, India

Abstract

Aim and Introduction:

Coronavirus Pandemic has significantly disrupted various sectors in India as well as the whole world. The education sector is also affected. Schools and colleges temporarily started shutting down during the pandemic spread. There is a uncertainty when they will reopen. All this creates an impact on the student's education. As millions of kids take online school classes from home globally including in India, government along with private education sector have a great responsibility to offer online e-Learning to more than 60 million college students and 1.5 billion school students worldwide. The aim of the study is to find how the long lockdown period has created an impact on the education among school kids

Materials and Method:

An online survey had been prepared with 17 questions regarding the topic and had been circulated to 100 random participants who were school children belonging to 6 to 17 years of age through an online website- google docs, who were school children. The participants were selected randomly. The statistics done using SPSS software, chi square test was done to check the association and a p value of 0.05 was said to be statistically significant. This survey was conducted in may 2020.

Results and Discussion:

From the data collected it was noticed that 66% of the participants feel that studies were affected during the long lockdown whereas the long lockdown did not affect the studies of 33% of the population.

Conclusion:

E learning is one of the solution. But low- income private and government school counterparts have completely shut down for not having access to e learning solutions. Long lockdown period do have an impact on student's education. The government must take measures quickly after the lockdown is over to access the education of children.

Keywords: COVID -19, education, e learning ,population affected, studies etc

Introduction

Lockdown was initiated to reduce the spread of COVID-19 infection. This caused a lot of changes in the daily life of all age groups. Schools are shut and kids who spend 3-7 hours in a

structured learning environment away from home are stuck indoors for months. Going school is the best public policy tool available to raise skills. Even short period of missed school will have consequences for skill growth. It is just like holidays for students but due to a long break this might affect their studies in future. Educating children has been stopped for a long period, due to which the mental health may also suffer. Amidst this background, the department and regulators have started moving towards developing an online mode of education. (Kumar *et al.*, no date) This practice increases screen time of children which may affect them in many ways. Many parents are hoping that this is a temporary phenomenon that will fade with the lifting of the lockdown and the reopening of schools. But some say that online education is set to become the new normal in a post COVID world. (*Covid-19 lockdown: Amid e-learning push, parents wary as children's screen time increases - india news - Hindustan Times*, 2020) School closures impact not only students, Teachers and families, but have far reaching economic and societal consequences. School closures in response to COVID-19 have shed light on various social and economic issues, including students' debts, digital learning, food insecurity and homelessness as well as access to childcare, healthcare, housing, internet and disability services. (Al-Samarrai, Gangwar and Gala, 2020)

For parents of school going kids across the country, the experience has been exhausting. Home schooling can be done by their parents to keep their children under a learning environment. In this situation every home is school and every parent is a teacher. Teaching is moving online. Student assessments are also moving online, with a lot of trial and error and uncertainty for everyone. ('Impact of Covid -19 on children's education', 2020) Online classes are sometimes creative but some kids cannot accept learning from online as classroom is their learning environment. Parents can encourage creativity by asking questions, setting challenges etc to keep their child skilled and creative. (Roy, no date) Education post COVID-19 will embrace learnings from science and emphasise a greater focus on issues that endanger our health, society, life and earth. (Desk, 2020) This pandemic is affecting children in many ways such as falling in poverty, exacerbating the learning crisis, threats to child survival and health as well as risks for child safety. (UNSDG / Policy Brief: *The Impact of COVID-19 on children*, no date) Systematic monitoring and dedicated research are also needed to underpin future responses that limit education disruptions and promote health for all. (Jourdan, Marmot and Gray, 2020)

Parents have worries about their child failing behind, but if they are not engaged in their daily routine of learning. It is based on the child's interest or choice to learn. Most of the children must be independent in choosing when and what to learn. Such kids will automatically be researching and trying to find new things to occupy their time with and to be inspired by. School children get stressed this also causes obesity staying at home. (Shukri *et al.*, 2016) There are numerous high end researches being done all around the world such as in vivo (Ponnulakshmi *et al.*, 2019), nanotechnology (Wu *et al.*, 2019) (Ke *et al.*, 2019) nanotechnology using gold nanoparticles (Li *et al.*, 2020) mixed with herbal extracts (Wang *et al.*, 2019), cancer biology (Ma

et al., 2019)(Gan *et al.*, 2019) find the cure for inflammation(Menon, V and Gayathri, 2016)(Jainu, Priya and Mohan, 2018) elucidating apoptotic pathway(Mohan, Veeraraghavan and Jainu, 2015),analysing the cytotoxicity of various substances(Rengasamy *et al.*, 2018),effects and benefits of various natural products(Chen *et al.*, 2019)and other advanced researches(Rengasamy *et al.*, 2016; Get *et al.*, 2018)But since COVID-19 is currently prevalent,more researched and awareness is requires.This survey is done to know if students are getting affected due to the quarantine or if they are able to keep themselves engaged by learning.Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Ariga *et al.*, 2018; Basha, Ganapathy and Venugopalan, 2018; Hannah *et al.*, 2018; Hussainy *et al.*, 2018; Jeevanandan and Govindaraju, 2018; Kannan and Venugopalan, 2018; Kumar and Antony, 2018; Manohar and Sharma, 2018; Menon *et al.*, 2018; Nandakumar and Nasim, 2018; Nandhini, Babu and Mohanraj, 2018; Ravinthar and Jayalakshmi, 2018; Seppan *et al.*, 2018; Teja, Ramesh and Priya, 2018; Duraisamy *et al.*, 2019; Gheena and Ezhilarasan, 2019; Hema Shree *et al.*, 2019; Rajakeerthi and Ms, 2019; Rajendran *et al.*, 2019; Sekar *et al.*, 2019; Sharma *et al.*, 2019; Siddique *et al.*, 2019; Janani, Palanivelu and Sandhya, 2020; Johnson *et al.*, 2020; Jose, Ajitha and Subbaiyan, 2020).

The aim of the survey is to find how the long lockdown period has created an impact on the education among school kids.

Materials and Method

The questionnaire has been prepared and was distributed through an online survey link-Google forms.The study population belonged to an age group of 6 to 17 years.The questionnaire consists of 17 questions.The participants were explained about the purpose of study in detail.The questions were carefully studied and the corresponding answers were marked by the participants.The sample size of the study was 100 school students, randomly selected .The statistics done using SPSS software, chi square test was done to check the association and a p value of 0.05 was said to be statistically significant.The survey was done on may 2020.

Results

Various responses of the survey were collected, the results were statistically studied and analysed. Among the school students, the majority who participated in the survey belonged to the age group between 11 to 17 as well as mostly females participated that was 54%. (Figure 1). The lock down affected the studies of 66% of the population and therefore 64% of the population feel that after quarantine it will be hard for them to cope up with their studies.(figure 2&8). Only 38% of the population spend 2 hours, 26% of them spend one hour and only 16% spend six hours and more studying at home per day due to which 60% do the population feel that their grades will decrease after quarantine. (Figure 3). Online classes were provided to 68% of the schools among the population under which 44% of the students felt it was not useful and 41% felt it was useful.(figure 4&5). 57% of the participants feel that lockdown is stressful and if it gets extended 39% of them will feel more stressed(figure 6) and 36% will have mixed emotions..

58% of the population feel that the assignments given by their school is useful and if they have any doubts 41% of them get it cleared by contacting their teachers and 36% use technology. (Figure 7). 60% of the students are concerned about their study life but still during quarantine only 11% prefer to study whereas 28% prefer to be active in social media and 26% playing online games. 41% of the students did not belong to 10th or 12th grade but 34% who were 10th and 12th grade were afraid of their board results due to this lockdown. 67% of the population feel that home gives them a good learning atmosphere and 42% of them were confident that they will be able to take a test on the first day after school reopens. From the data collected and statistically analysed, 17% of the boys which is majority are involved in playing online games and 18% of the females are involved in social media and not statistically significant. (figure 9) Association between gender and the students who think if their grades might decrease due to the quarantine. Most of the male (25%) and female (35%) accept that their grades might decrease and not statistically significant. (figure 10) Association between gender and the population who think that they can do good in an exam just after the school reopens. Most of the males (18%) and females (24%) were confident that they can take a test right after the school reopens and not statistically significant. (figure 11) association between gender and how the population feels if the lockdown extends. Majority of the Males said they have mixed emotions (22%) and majority of the females said they were stressed (18%). (figure 12)

Discussion

Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

In a previous study done, it was analysed that more than 75% students reported severe impact on education due to COVID-19 crisis. In the study they concluded that 86% of the students prepared online classes. (S, 2020) but in the present study 66% reported severe impact on education due to lockdown and 68% of the school provided online classes but only 41% felt they were useful. This contrast is due to the reach of technology to rural and urban areas is not up to mark and not available. In another study done, it was studied that 96% are not having proper learning atmosphere in prison and due to which there is a contrast to the present study as the learning atmosphere is their own house. ('McGill University', no date)

This study might create or give more support to students for online classes and understand the impact of ongoing lockdown on their studies and the challenges they are facing towards exploring alternate ways of learning. It may help to know the areas where e learning can not be done and provide required technology to improve the educational learning among students.

Conclusion

In response to school closures, UNESCO recommended the use of distance learning programmes and open educational applications and platforms that schools and Teachers can use to reach learners remotely and limit the disruption of education. From the current survey, it can be concluded that the Long lockdown period do have an impact on student's education.

Acknowledgement: The author would like to thank the study participants for their participation and kind cooperation

Author Contribution

Pravalika: Literature search, data collection, analysis, manuscript writing

R. Gayathri: Data verification, Manuscript drafting

Gifrina Jayaraj: data verification and manuscript drafting

V Vishnupriya : Title discussion

Conflict of Interest

None declared

References

1. Al-Samarrai, S., Gangwar, M. and Gala, P. (2020) 'The Impact of the COVID-19 Pandemic on Education Financing'. doi: 10.1596/33739.
2. Ariga, P. *et al.* (2018) 'Determination of correlation of width of Maxillary Anterior Teeth using Extraoral and Intraoral Factors in Indian Population: A systematic review', *World journal of dentistry*, 9(1), pp. 68–75. doi: 10.5005/jp-journals-10015-1509.
3. Basha, F. Y. S., Ganapathy, D. and Venugopalan, S. (2018) 'Oral hygiene status among pregnant women', *Journal of advanced pharmaceutical technology & research*, 11(7), p. 3099. doi: 10.5958/0974-360x.2018.00569.3.
4. Chandrasekar, R. *et al.* (2020) 'Development and validation of a formula for objective assessment of cervical vertebral bone age', *Progress in orthodontics*, 21(1), p. 38. doi: 10.1186/s40510-020-00338-0.
5. Chen, F. *et al.* (2019) '6-shogaol, a active constituents of ginger prevents UVB radiation mediated inflammation and oxidative stress through modulating Nrf2 signaling in human epidermal keratinocytes (HaCaT cells)', *Journal of Photochemistry and Photobiology B: Biology*, p. 111518. doi: 10.1016/j.jphotobiol.2019.111518.
6. Covid-19 lockdown: Amid e-learning push, parents wary as children's screen time increases - india news - Hindustan Times (2020) Hindustan Times. Available at: <https://www.hindustantimes.com/india-news/covid-19-lockdown-amid-e-learning-push-parents-wary-as-children-s-screen-time-increases/story-ejsLGZz5EiZCLxjThu2H3M.html> (Accessed: 4 June 2020).
7. Desk, I. T. W. (2020) 'Covid-19 lockdown: How the pandemic bringing change in Indian education system'. Available at: <https://www.indiatoday.in/education-today/featurephilia/story/covid-19-lockdown-how-the-pandemic-brining-change-in-indian-education-system-1674322-2020-05-04> (Accessed: 4 June 2020).

8. Duraisamy, R. *et al.* (2019) 'Compatibility of Nonoriginal Abutments With Implants: Evaluation of Microgap at the Implant-Abutment Interface, With Original and Nonoriginal Abutments', *Implant dentistry*, 28(3), pp. 289–295. doi: 10.1097/ID.0000000000000885.
9. Ezhilarasan, D., Apoorva, V. S. and Ashok Vardhan, N. (2019) 'Syzygium cumini extract induced reactive oxygen species-mediated apoptosis in human oral squamous carcinoma cells', *Journal of oral pathology & medicine: official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology*, 48(2), pp. 115–121. doi: 10.1111/jop.12806.
10. Gan, H. *et al.* (2019) 'Zingerone induced caspase-dependent apoptosis in MCF-7 cells and prevents 7,12-dimethylbenz(a)anthracene-induced mammary carcinogenesis in experimental rats', *Journal of Biochemical and Molecular Toxicology*. doi: 10.1002/jbt.22387.
11. Gheena, S. and Ezhilarasan, D. (2019) 'Syringic acid triggers reactive oxygen species-mediated cytotoxicity in HepG2 cells', *Human & experimental toxicology*, 38(6), pp. 694–702. doi: 10.1177/0960327119839173.
12. G, R. *et al.* (2018) 'CYTOTOXICITY OF STRAWBERRY EXTRACT ON ORAL CANCER CELL LINE', *Asian Journal of Pharmaceutical and Clinical Research*, p. 353. doi: 10.22159/ajpcr.2018.v11i9.25955.
13. Hannah, R. *et al.* (2018) 'Awareness about the use, ethics and scope of dental photography among undergraduate dental students dentist behind the lens', *Journal of advanced pharmaceutical technology & research*, 11(3), p. 1012. doi: 10.5958/0974-360x.2018.00189.0.
14. Hema Shree, K. *et al.* (2019) 'Saliva as a Diagnostic Tool in Oral Squamous Cell Carcinoma - a Systematic Review with Meta Analysis', *Pathology oncology research: POR*, 25(2), pp. 447–453. doi: 10.1007/s12253-019-00588-2.
15. Hussainy, S. N. *et al.* (2018) 'Clinical performance of resin-modified glass ionomer cement, flowable composite, and polyacid-modified resin composite in noncarious cervical lesions: One-year follow-up', *Journal of conservative dentistry: JCD*, 21(5), pp. 510–515. doi: 10.4103/JCD.JCD_51_18.
16. 'Impact of Covid -19 on children's education' (2020) *Journal of Xidian University*. doi: 10.37896/jxu14.5/299.
17. Jainu, M., Priya, V. and Mohan, S. (2018) 'Biochemical evidence for the antitumor potential of Garcinia mangostana Linn. On diethylnitrosamine-induced hepatic carcinoma', *Pharmacognosy Magazine*, p. 186. doi: 10.4103/pm.pm_213_17.
18. Janani, K., Palanivelu, A. and Sandhya, R. (2020) 'Diagnostic accuracy of dental pulse oximeter with customized sensor holder, thermal test and electric pulp test for the evaluation of pulp vitality: an in vivo study', *Brazilian dental science*, 23(1). doi: 10.14295/bds.2020.v23i1.1805.
19. Jeevanandan, G. and Govindaraju, L. (2018) 'Clinical comparison of Kedo-S paediatric

- rotary files vs manual instrumentation for root canal preparation in primary molars: a double blinded randomised clinical trial', *European archives of paediatric dentistry: official journal of the European Academy of Paediatric Dentistry*, 19(4), pp. 273–278. doi: 10.1007/s40368-018-0356-6.
20. Johnson, J. *et al.* (2020) 'Computational identification of MiRNA-7110 from pulmonary arterial hypertension (PAH) ESTs: a new microRNA that links diabetes and PAH', *Hypertension research: official journal of the Japanese Society of Hypertension*, 43(4), pp. 360–362. doi: 10.1038/s41440-019-0369-5.
21. Jose, J., Ajitha and Subbaiyan, H. (2020) 'Different treatment modalities followed by dental practitioners for Ellis class 2 fracture – A questionnaire-based survey', *The open dentistry journal*, 14(1), pp. 59–65. doi: 10.2174/1874210602014010059.
22. Jourdan, D., Marmot, M. and Gray, N. (2020) *Coronavirus: there is an urgent need to re-open schools – this is how to make it happen*, *The Conversation*. Available at: <http://theconversation.com/coronavirus-there-is-an-urgent-need-to-re-open-schools-this-is-how-to-make-it-happen-137818> (Accessed: 4 June 2020).
23. Kannan, A. and Venugopalan, S. (2018) 'A systematic review on the effect of use of impregnated retraction cords on gingiva', *Journal of advanced pharmaceutical technology & research*, 11(5), p. 2121. doi: 10.5958/0974-360x.2018.00393.1.
24. Ke, Y. *et al.* (2019) 'Photosynthesized gold nanoparticles from *Catharanthus roseus* induces caspase-mediated apoptosis in cervical cancer cells (HeLa)', *Artificial Cells, Nanomedicine, and Biotechnology*, pp. 1938–1946. doi: 10.1080/21691401.2019.1614017.
25. Kumar, D. and Antony, S. D. P. (2018) 'Calcified canal and negotiation-A review', *Journal of advanced pharmaceutical technology & research*, 11(8), p. 3727. doi: 10.5958/0974-360x.2018.00683.2.
26. Kumar, S. *et al.* (no date) 'Environmental Impact of Corona Virus (COVID-19) and Nationwide Lockdown in India: An Alarm to Future Lockdown Strategies'. doi: 10.20944/preprints202005.0403.v1.
27. Li, Z. *et al.* (2020) 'Apoptotic induction and anti-metastatic activity of eugenol encapsulated chitosan nanopolymer on rat glioma C6 cells via alleviating the MMP signaling pathway', *Journal of Photochemistry and Photobiology B: Biology*, p. 111773. doi: 10.1016/j.jphotobiol.2019.111773.
28. Manohar, M. P. and Sharma, S. (2018) 'A survey of the knowledge, attitude, and awareness about the principal choice of intracanal medicaments among the general dental practitioners and nonendodontic specialists', *Indian journal of dental research: official publication of Indian Society for Dental Research*, 29(6), pp. 716–720. doi: 10.4103/ijdr.IJDR_716_16.
29. Mathew, M. G. *et al.* (2020) 'Evaluation of adhesion of *Streptococcus mutans*, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: Randomized controlled trial', *Clinical oral*

- investigations*, pp. 1–6. Available at: <https://link.springer.com/article/10.1007/s00784-020-03204-9>.
30. Ma, Y. *et al.* (2019) ‘Sesame Inhibits Cell Proliferation and Induces Apoptosis through Inhibition of STAT-3 Translocation in Thyroid Cancer Cell Lines (FTC-133)’, *Biotechnology and Bioprocess Engineering*, pp. 646–652. doi: 10.1007/s12257-019-0151-1.
31. ‘McGill University’ (no date). Available at: <https://www.mcgill.ca/newsroom/channels/news/experts-covid-19-309919> (Accessed: 4 June 2020).
32. Menon, A., V. V. P. and Gayathri, R. (2016) ‘PRELIMINARY PHYTOCHEMICAL ANALYSIS AND CYTOTOXICITY POTENTIAL OF PINEAPPLE EXTRACT ON ORAL CANCER CELL LINES’, *Asian Journal of Pharmaceutical and Clinical Research*, p. 140. doi: 10.22159/ajpcr.2016.v9s2.13313.
33. Menon, S. *et al.* (2018) ‘Selenium nanoparticles: A potent chemotherapeutic agent and an elucidation of its mechanism’, *Colloids and surfaces. B, Biointerfaces*, 170, pp. 280–292. doi: 10.1016/j.colsurfb.2018.06.006.
34. Mohan, S. K., Veeraraghavan, V. P. and Jainu, M. (2015) ‘Effect of pioglitazone, quercetin, and hydroxy citric acid on vascular endothelial growth factor messenger RNA (VEGF mRNA) expression in experimentally induced nonalcoholic steatohepatitis (NASH)’, *TURKISH JOURNAL OF MEDICAL SCIENCES*, pp. 542–546. doi: 10.3906/sag-1404-136.
35. Nandakumar, M. and Nasim, I. (2018) ‘Comparative evaluation of grape seed and cranberry extracts in preventing enamel erosion: An optical emission spectrometric analysis’, *Journal of conservative dentistry: JCD*, 21(5), pp. 516–520. doi: 10.4103/JCD.JCD_110_18.
36. Nandhini, J. S. T., Babu, K. Y. and Mohanraj, K. G. (2018) ‘Size, shape, prominence and localization of gerdy’s tubercle in dry human tibial bones’, *Journal of advanced pharmaceutical technology & research*, 11(8), p. 3604. doi: 10.5958/0974-360x.2018.00663.7.
37. Pc, J., Marimuthu, T. and Devadoss, P. (2018) ‘Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study’, *Clinical implant dentistry and related research*. Available at: <https://europepmc.org/article/med/29624863>.
38. Ponnulakshmi, R. *et al.* (2019) ‘In silico and in vivo analysis to identify the antidiabetic activity of beta sitosterol in adipose tissue of high fat diet and sucrose induced type-2 diabetic experimental rats’, *Toxicology mechanisms and methods*, 29(4), pp. 276–290. doi: 10.1080/15376516.2018.1545815.
39. Rajakeerthi and Ms, N. (2019) ‘Natural Product as the Storage medium for an avulsed tooth – A Systematic Review’, *Cumhuriyet Üniversitesi Diş Hekimliği Fakültesi dergisi*, 22(2), pp. 249–256. doi: 10.7126/cumudj.525182.

40. Rajendran, R. *et al.* (2019) 'Comparative evaluation of remineralizing potential of a paste containing bioactive glass and a topical cream containing casein phosphopeptide-amorphous calcium phosphate: An in vitro study', *Pesquisa brasileira em odontopediatria e clinica integrada*, 19(1), pp. 1–10. doi: 10.4034/pboci.2019.191.61.
41. Ramadurai, N. *et al.* (2019) 'Effectiveness of 2% Articaine as an anesthetic agent in children: randomized controlled trial', *Clinical oral investigations*, 23(9), pp. 3543–3550. doi: 10.1007/s00784-018-2775-5.
42. Ramesh, A. *et al.* (2018) 'Comparative estimation of sulfiredoxin levels between chronic periodontitis and healthy patients - A case-control study', *Journal of periodontology*, 89(10), pp. 1241–1248. doi: 10.1002/JPER.17-0445.
43. Ravinthar, K. and Jayalakshmi (2018) 'Recent advancements in laminates and veneers in dentistry', *Journal of advanced pharmaceutical technology & research*, 11(2), p. 785. doi: 10.5958/0974-360x.2018.00148.8.
44. Rengasamy, G. *et al.* (2016) 'Characterization, Partial Purification of Alkaline Protease from Intestinal Waste of Scomberomorus Guttatus and Production of Laundry Detergent with Alkaline Protease Additive', *Indian Journal of Pharmaceutical Education and Research*, 50(2s). Available at: <http://ijper.org/article/413?destination=node%2F413> (Accessed: 21 June 2020).
45. Rengasamy, G. *et al.* (2018) 'Cytotoxic and apoptotic potential of Myristica fragrans Houtt. (mace) extract on human oral epidermal carcinoma KB cell lines', *Brazilian Journal of Pharmaceutical Sciences*. doi: 10.1590/s2175-97902018000318028.
46. Santulli, G. Epidemiology of cardiovascular disease in the 21st century: Updated numbers and updated facts(2013) *Journal of Cardiovascular Disease Research*, 1 (1), .
47. Roy, S. (no date) 'COVID-19 pandemic: Impact of lockdown, contact and non-contact transmissions on infection dynamics'. doi: 10.1101/2020.04.04.20050328.
48. Samuel, S. R. (2021) 'Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life?', *International journal of paediatric dentistry / the British Paedodontic Society [and] the International Association of Dentistry for Children*, 31(2), pp. 285–286. doi: 10.1111/ipd.12662.
49. Sekar, D. *et al.* (2019) 'Methylation-dependent circulating microRNA 510 in preeclampsia patients', *Hypertension research: official journal of the Japanese Society of Hypertension*, 42(10), pp. 1647–1648. doi: 10.1038/s41440-019-0269-8.
50. Seppan, P. *et al.* (2018) 'Therapeutic potential of Mucuna pruriens (Linn.) on ageing induced damage in dorsal nerve of the penis and its implication on erectile function: an experimental study using albino rats', *The aging male: the official journal of the International Society for the Study of the Aging Male*, pp. 1–14. doi: 10.1080/13685538.2018.1439005.
51. Sharma, P. *et al.* (2019) 'Emerging trends in the novel drug delivery approaches for the treatment of lung cancer', *Chemico-biological interactions*, 309, p. 108720. doi: 10.1016/j.cbi.2019.06.033.

52. Shukri, N. M. M. *et al.* (2016) 'Awareness in childhood obesity', *Research Journal of Pharmacy and Technology*, p. 1658. doi: 10.5958/0974-360x.2016.00334.6.
53. Siddique, R. *et al.* (2019) 'Qualitative and quantitative analysis of precipitate formation following interaction of chlorhexidine with sodium hypochlorite, neem, and tulsi', *Journal of conservative dentistry: JCD*, 22(1), pp. 40–47. doi: 10.4103/JCD.JCD_284_18.
54. Sridharan, G. *et al.* (2019) 'Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma', *Journal of oral pathology & medicine: official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology*, 48(4), pp. 299–306. doi: 10.1111/jop.12835.
55. S, S. K. (2020) *Lockdown Hits Poor Students Hard, 86% Unable to Explore Online Learning: Survey*, *NDTV.com*. NDTV. Available at: <https://www.ndtv.com/education/covid-19-lockdown-hits-poor-students-hard-86-unable-to-explore-online-learning-survey-2209009> (Accessed: 4 June 2020).
56. Teja, K. V., Ramesh, S. and Priya, V. (2018) 'Regulation of matrix metalloproteinase-3 gene expression in inflammation: A molecular study', *Journal of conservative dentistry: JCD*, 21(6), pp. 592–596. doi: 10.4103/JCD.JCD_154_18.
57. *UNSDG | Policy Brief: The Impact of COVID-19 on children* (no date). Available at: https://www.google.com.sg/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUK Ewjhro7H1ufpAhXDbn0KHTw_B2AQFjAAegQIAxAB&url=https%3A%2F%2Funsdg.un.org%2Fresources%2Fpolicy-brief-impact-covid-19-children&usg=AOvVaw0IFa8QwmqNRCwh5HI4-yUI (Accessed: 4 June 2020).
58. Vijayashree Priyadharsini, J. (2019) 'In silico validation of the non-antibiotic drugs acetaminophen and ibuprofen as antibacterial agents against red complex pathogens', *Journal of periodontology*, 90(12), pp. 1441–1448. doi: 10.1002/JPER.18-0673.
59. Vijayashree Priyadharsini, J., Smiline Girija, A. S. and Paramasivam, A. (2018) 'In silico analysis of virulence genes in an emerging dental pathogen *A. baumannii* and related species', *Archives of oral biology*, 94, pp. 93–98. doi: 10.1016/j.archoralbio.2018.07.001.
60. Wang, Y. *et al.* (2019) 'Synthesis of Zinc oxide nanoparticles from *Marsdenia tenacissima* inhibits the cell proliferation and induces apoptosis in laryngeal cancer cells (Hep-2)', *Journal of Photochemistry and Photobiology B: Biology*, p. 111624. doi: 10.1016/j.jphotobiol.2019.111624.
61. Wu, F. *et al.* (2019) 'Biologically synthesized green gold nanoparticles from Siberian ginseng induce growth-inhibitory effect on melanoma cells (B16)', *Artificial Cells, Nanomedicine, and Biotechnology*, pp. 3297–3305. doi: 10.1080/21691401.2019.1647224.

Figure Legends

Figure 1:represents the distribution of participants based on their gender 54% of the participants were females(blue) and 46% of them were males (red).

Figure 2:represents the distribution of participants based on their opinion towards Lockdown and its impact on their studies, where 66% (blue) of the study participants felt their studies got affected and ,34%(red) of them didn't feel the same.

Figure 3: represents the distribution of participants based on the amount of time spent studying each day at home during lockdown, where Blue represents the population who studied for 1 hour(26%), Red represents the population who studied for 2 hours(38%), Green represents the population who studied for 3 to 5 hours (20%), Orange represents the population who studied for 6 hours and more (16%)

Figure 4:represents the distribution of participants who attended online classes conducted during Lockdown, where 68% (blue) of the study participants attended online classes and ,32%(red) of them didn't attend.

Figure 5:represents the distribution of participants based on the opinion towards the online classes , where 41% (blue) of the study participants felt useful ,44%(red) of them did not find it useful and 15% of the participants felt online classes were useful for some topics.

Figure 6:represents the distribution of participants based on the opinion that they felt stressed due to a long lockdown period , where 57% (blue) of the study participants felt stressed, 43%(red) of them didn't feel the same.

Figure 7:represents the distribution of participants based on how they got their doubts clarified , where 23% (blue) of the study participants got clarified from parents, 41%(red) of them from teachers and 36% (green) depends on the internet to get their doubts clarified.

Figure 8: represents the distribution of participants based on how they were able to cope up with their studies since they missed their regular school, where 64% (blue) of the study participants felt hard to cope up and 36% (red) of them did not feel so.

Figure 9:Bar chart showing association between gender and the lockdown activities done by the study participants during lockdown. X axis represents the gender and Y axis represents the number of participants opted to do various activities such as ,play online games(blue) ,social media(red) ,studying(green), spent time with family(orange) and others(yellow) .Majority of the Males were involved in playing online games (17%) and majority of the females were involved in social media(18%).Studying was minimum among both the gender during lockdown,Chi square test was done and it was found not statistically significant(Pearson Chi square value-6.689, df-4 ,p value was 0.153 (>0.05)).

Figure 10:Bar chart showing association between gender and the students who think that their grades might decrease due to the lockdown. X axis represents the gender and Y axis represents the number of participants responded.(blue) ' yes' and (red)represents 'no'.Majority of female participants (35 out of 54)strongly believe that their grades will come down due to lockdown.Females tend to be more worried about their grades than males. chi square test was

done and it was found not to be statistically significant(Pearson Chi square value-1.134, df-1 ,p value was 0.287(>0.05).

Figure 11:Bar chart showing association between gender and the opinion on how they can perform in the exam just after the school reopens. X axis represents the gender and Y axis represents the number of participants(blue) responded 'yes',(red) represents 'no' and (green) represents not sure.Majority of the female participants were confident that they can perform well than male participants, indicating their interest towards studies,a chi square test was done and it was found not statistically significant(Pearson Chi square value-0.566, df-2 ,p value was 0.754(>0.05).

Figure 12:Bar chart showing association between gender and opinion on the idea of extension of lockdown.. X axis represents the gender and Y axis represents the number of participants who will be happy(blue) , stressed(red) and who will have mixed emotions (green).Majority of the female participants will feel stressed if the lockdown extends further than male participants.Lack of normal schooling makes the female students feel stressed,a chi square test was done and it was found not to be statistically significant (Pearson Chi square value-0.363, df-2 ,p value was 0.834(>0.05).

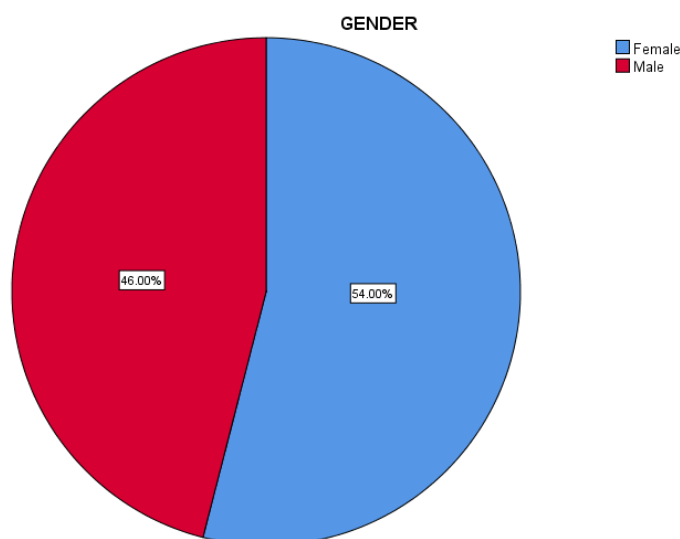


Figure 1: represents the distribution of participants based on their gender 54% of the participants were females(blue) and 46% of them were males (red).

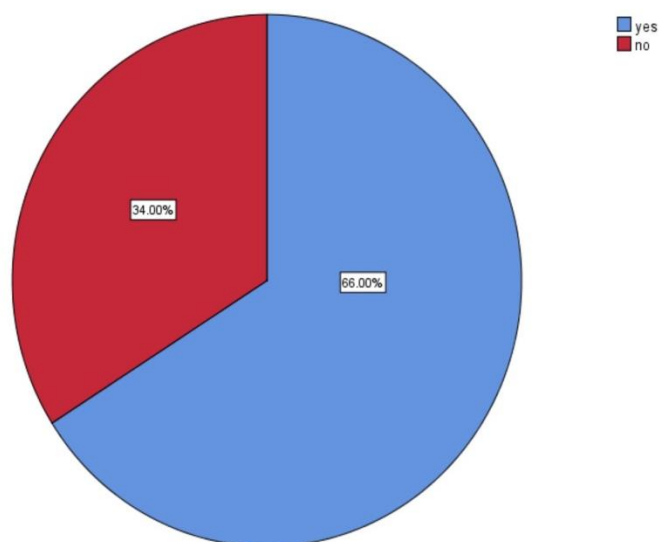


Figure 2: represents the distribution of participants based on their opinion towards Lockdown and its impact on their studies, where 66% (blue) of the study participants felt their studies got affected and ,34%(red) of them didn't feel the same.

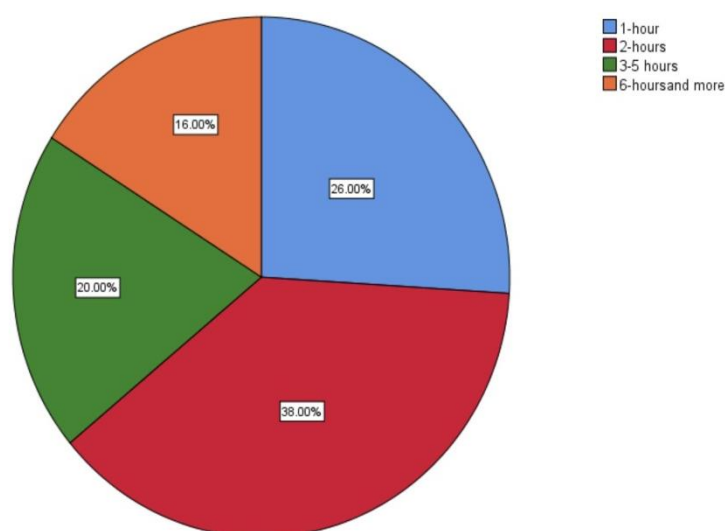


Figure 3: represents the distribution of participants based on the amount of time spent studying each day at home during lockdown, where Blue represents the population studied for 1 hour(26%), Red represents the population who studied for 2 hours(38%), Green represents the population who studied for 3 to 5 hours (20%), Orange represents the population who studied for 6 hours and more (16%)

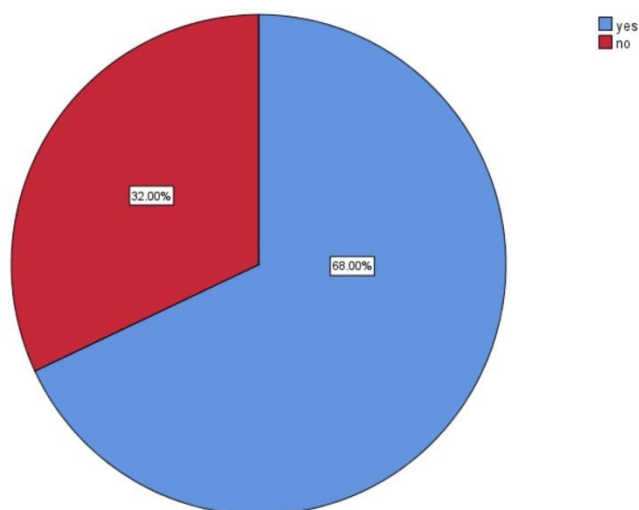


Figure 4 :represents the distribution of participants who attended online classes conducted during Lockdown, where 68% (blue) of the study participants attended online classes and ,32%(red) of them did not attend.

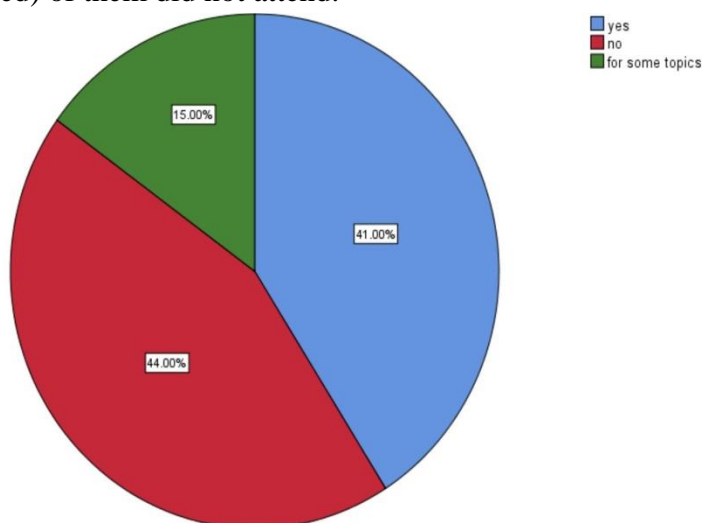


Figure 5: represents the distribution of participants based on the opinion towards the online classes , where 41% (blue) of the study participants felt useful ,44%(red) of them didn't find it useful and 15% of the participants felt online classes were useful for some topics.

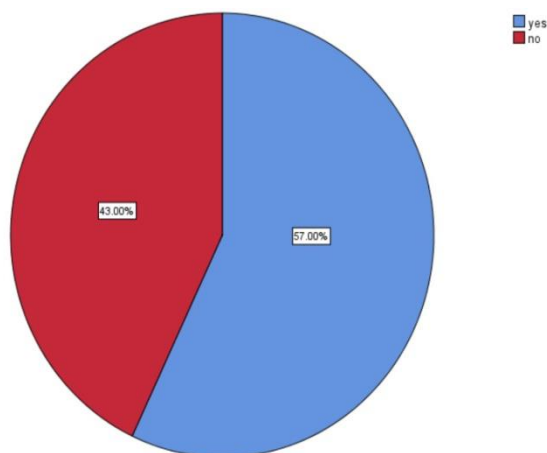


Figure 6: represents the distribution of participants based on the opinion that they feel stressed due to a long lockdown period , where 57% (blue) of the study participants felt stressed, 43%(red) of them did not feel the same.

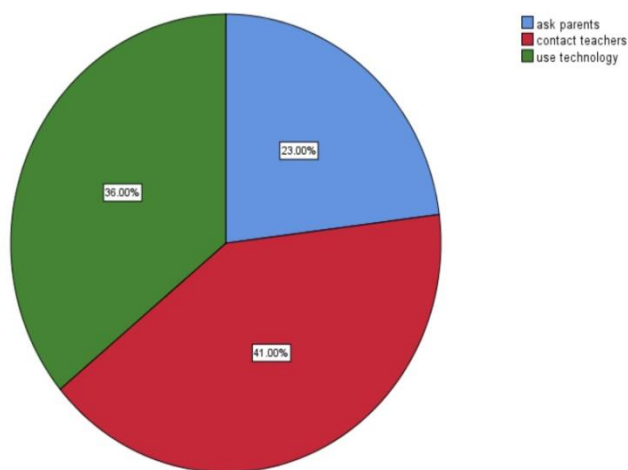


Figure 7 :represents the distribution of participants based on how they got their doubts clarified , where 23% (blue) of the study participants get clarified from parents, 41%(red) of them from teachers and 36% (green) depends on the internet to get their doubts clarified.

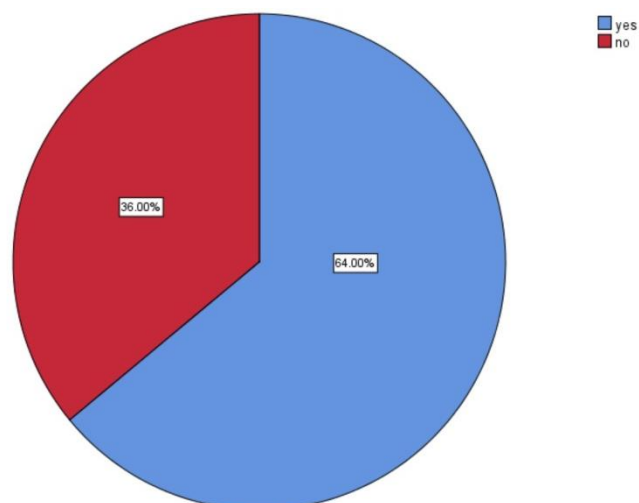


Figure 8: represents the distribution of participants based on how they were able to cope up with their studies since they missed their regular school, where 64% (blue) of the study participants felt hard to cope up and 36% (red) of them did not feel so.

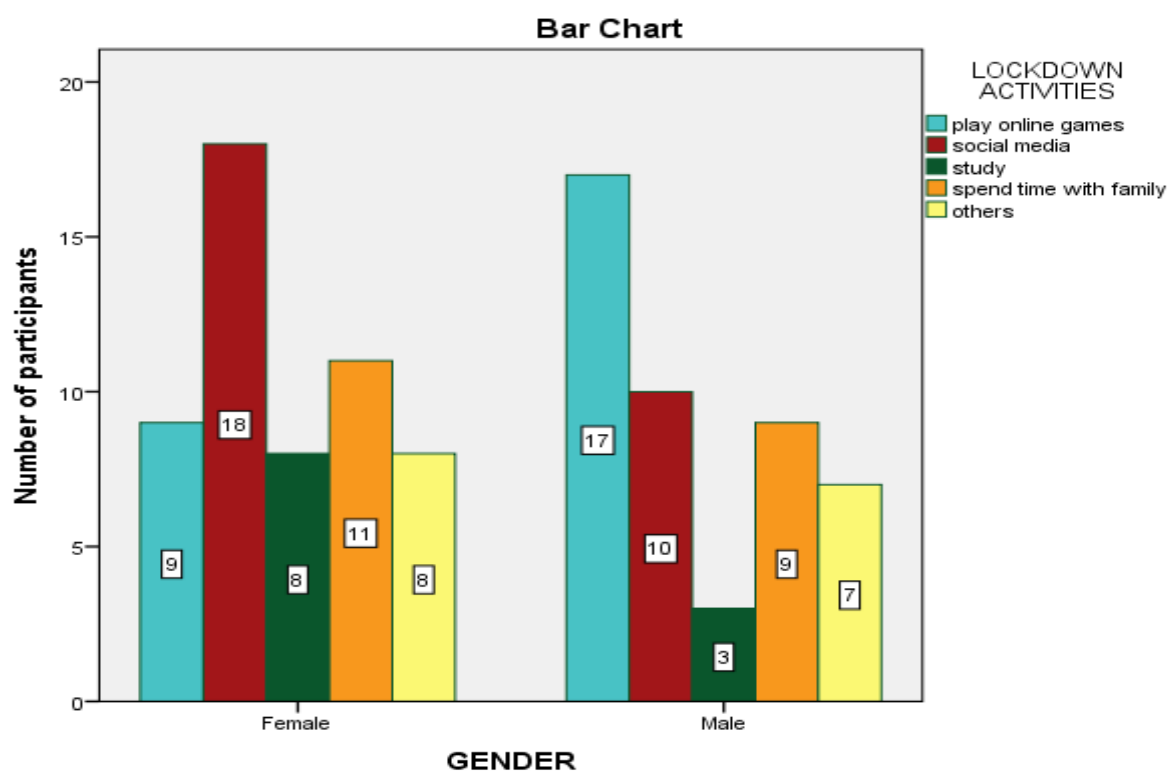


Figure 9: Bar graph showing association between gender and the lockdown activities done by the study participants during lockdown. Majority of the Males were involved in playing online games (17%) and majority of the females were involved in social media(18%).Studying was minimum among both the gender during lockdown,Chi square test was done and it was found not statistically significant(Pearson Chi square value-6.689, df-4 ,p value was 0.153 (>0.05)).

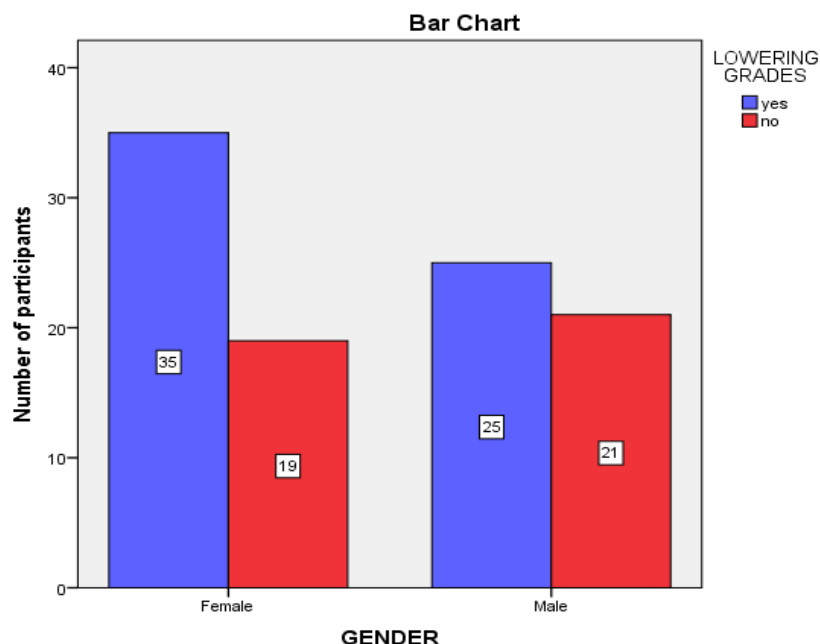


Figure 10: Bar chart showing association between gender and the students who think that their grades might decrease due to the lockdown. X axis represents the gender and Y axis represents the number of participants responded.(blue) ‘yes’ and (red)represents ‘no’.Majority of female participants (35 out of 54)strongly believe that their grades will come down due to lockdown.Females tend to be more worried about their grades than males. chi square test was done and it was found not to be statistically significant(Pearson Chi square value-1.134, df-1 ,p value was 0.287(>0.05)).

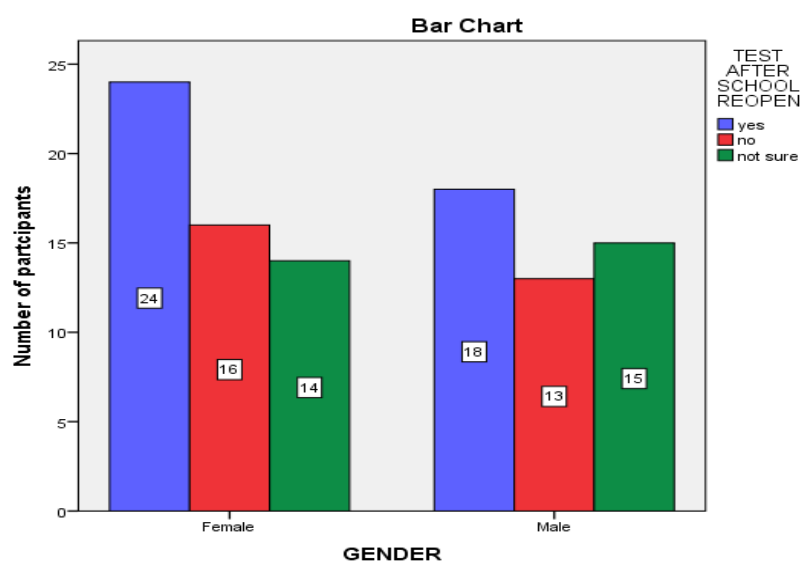


Figure 11: Bar chart showing association between gender and the opinion on how they can perform in the exam just after the school reopens. X axis represents the gender and Y axis represents the number of participants(blue) responded’ yes’,(red) represents ;no’ and (green)

represents not sure. Majority of the female participants were confident that they can perform well than male participants, indicating their interest towards studies, a chi square test was done and it was found not statistically significant (Pearson Chi square value-0.566, df-2, p value was 0.754(>0.05)).

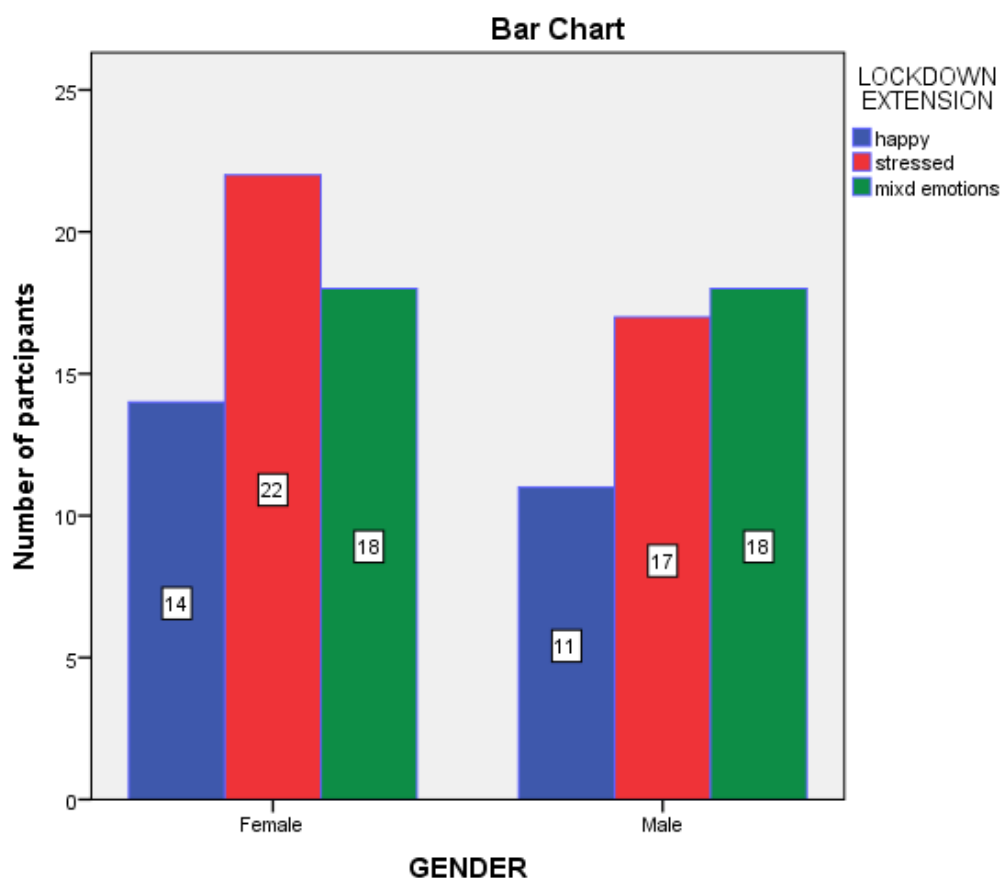


Figure 12: Bar chart showing association between gender and opinion on the idea of extension of lockdown.. X axis represents the gender and Y axis represents the number of participants who will be happy (blue), stressed (red) and who will have mixed emotions (green). Majority of the female participants will feel stressed if the lockdown extends further than male participants. Lack of normal schooling makes the female students feel stressed, a chi square test was done and it was found not to be statistically significant (Pearson Chi square value-0.363, df-2, p value was 0.834(>0.05)).