

IMPACT OF SECURITY LOCK-DOWN ON EDUCATION IN SOUTHWESTERN NIGERIA

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Abstract

Education in Nigeria has been relatively stable apart from regular strike actions of the academic staff union of universities (ASUU) and students' unrest in some universities. However, in the recent past, especially in the year 2020 (2019/2020 academic year), there have been series of interruptions occasioned especially by the covid-19 lock-down. This has caused a whole academic year to be lost, thereby causing disruption in the respective academic calendars. This article therefore, examined the impact of these lock-downs, a security strategy of government on education in Nigeria. The paper is hinged on the following three-fold objectives: First, to conceptualize security lock-downs; second, to examine how these series of lock-downs affected educational activities in Nigeria, and third, come up with workable strategies to reposition the state of the educational sector in Nigeria. The paper adopted Phenomenological method of research and was analyzed with descriptive and content analysis. The study findings revealed that, apart from the covid-19 lock-downs and its attendant effects on the educational sector, the security situation in the country has had its tolls on educational operations in the country. The article concluded that, an effective e-learning method that is backed up with workable policies, may rectify this imbalance in the educational sector of this country.

Keywords: Security lock-downs, Educational Sector, E-learning, Covid- 19 pandemic, #Endsars, curfews, ASUU, Strike actions.

1. Introduction

Lockdown was government's intervention to secure lives of citizens in the event of the covid-19 pandemic. The measure, which required that people stayed indoors to guard against being infected by the dreaded disease, or get some health complications resulting therefrom, put a stop to all outdoor activities including general educational operations. Both students and all workers within the educational sector could not go to school for the period of the lockdown, which was in phases, lasted. Though all sectors of the Nigerian state had its fair share of the effects of the lockdown, with attendant losses, the educational sector witnessed a total disruption in the curriculum and sessions of the different institutions. Some institutions, realizing that it could not adjust the 2019/2020 academic session, for instance, had to cancel the ill-fated year and begin a fresh 2020/2021 academic session.

It should be kept in mind that, it took government a long time to come up with decision as to when schools should resume classes. This is against the backdrop of governments' concern for the health of the children especially, who are considered vulnerable. Even the Academic Staff Union of Universities (ASUU) was vehemently against early reopening when some state governments, especially Lagos, were inching to reopen. At this time government at the centre insisted that it had not given directives for schools to reopen. It claimed it was more concerned with the health of the children.

However, when the pressure was much even from private school owners, parents, and other stake holders within the school sector, government had to succumb to pressure, but with a *proviso* that schools should adopt a line-up of conditions especially the provision of all covid-19 safety rules, namely: wearing of facemask by both students and staff, making available regular handwashing material, alcohol-based sanitizers, social distancing. But when schools finally reopened, both parents, students themselves, school owners, were already counting their losses occasioned by the serial lockdowns.

Therefore, whereas the lockdowns in Nigeria was said to ensure the security of the health and lives of citizens, the impacts and implications of this serial sit-at-home order were quite enormous on sectorial basis. Hence this paper seeks to ascertain these impacts especially on the education sector in Nigeria.

Literature Review

2.1 Conceptual Clarifications

Security lockdowns is taken, in this study to refer to a measure taken by governments the world over in the wake of the covid-19 pandemic, mainly to prevent people from contracting the virus. It a total halt of all human outdoor activities. The measure required that people stayed indoors for specified number of days or weeks as deemed fit. Though the lockdown was in phases, the cumulative effect on the different sectors was immense. On the economic sector, business activities were brought to a halt during the period and it got to a time that it became unbearable. Government was supposed to provide palliatives to cushion the effect of the lockdown, but was not evenly distributed within the region (southwestern Nigeria) covered by this study.

Whereas the purpose of the lockdown was to secure the life of people from the ravaging virus, it nevertheless had devastating effects on the society such as hunger, disruption of academic calendar and curriculum, among others. A World Bank report, *Policy Brief: Education during COVID-19 and beyond* (2020) states that, the COVID-19 pandemic had created the largest disruption of education systems in history. On a global level, the report gave a conservative figure of nearly 1.6 billion learners being affected in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world's student population, with up to 99 per cent in low and lower-middle income countries. The report states further that, the crisis resulting from the pandemic was exacerbating pre-existing education disparities by reducing the opportunities for many of the most vulnerable children, youth, and adults – those living in poor or rural areas, girls, refugees, persons with disabilities and forcibly displaced persons – to continue their learning. The report

stressed that learning losses also threaten to extend beyond the present generation and erase decades of progress. Some 23.8 million additional children and youth (from pre-primary to tertiary) may drop out or not have access to school in 2021 due to the pandemic's economic impact alone. In like manner, the education disruption has had, and will continue to have, substantial effects beyond education. The multiplier effect of closures of educational institutions hamper the provision of essential services to children and communities, including access to nutritious food, affect the ability of many parents to work, and increase risks of urban violence.

Citing the *World Bank Report (2020)* further, the disruptions caused by COVID-19 to everyday life meant that as many as 40 million children worldwide have missed out on early childhood education in their critical pre-school year. They thus missed a stimulating and enriching environment, learning opportunities, social interaction and in some cases adequate nutrition. This is likely to compromise their longer-term healthy development, especially those children from poor and disadvantaged families. In technical and vocational education and training systems, vulnerabilities including low levels of digitalisation and long-standing structural weaknesses, have been brought to light by the crisis. Disruptions in work places made it difficult to implement apprenticeship schemes and work-based learning modes, key elements of a functional and market-responsive technical and vocational system. In the higher education sub-sector, while online learning has generally taken place through recorded lectures and online platforms, some universities have postponed learning and teaching until further notice, due to the lack of information technology (IT) infrastructure for both students and teachers. Questions also remain about how to harmonise

2.1.1 Impact of School Closure (as a result of security lockdowns) on Children

School attendance is one of the best public tools available to raise a child's skills, awareness and ability. However, this long period of school closure had significant consequences on skill acquisition and growth of school children. It is worthy to note that schooling provides adequate learning but when schools close, children are deprived the opportunities for academic growth as well as academic development. The disadvantages of school closures are enormous for under-privileged students who tend to have fewer or no educational opportunity outside school.

The closure of schools, colleges and universities does not only interrupt the teaching of students around the world, it also coincides with a key assessment period and many examinations have been postponed or cancelled as a result of COVID-19. For instance, Cambridge International Examinations that include Cambridge IGCSE, Cambridge, O Level, Cambridge International AS and A Levels, Cambridge AICE Diploma and Cambridge Pre-University examinations for May/June 2020 diet were canceled worldwide as well as NECO SSCE, GCE 2020, UTME_2020. Though candidates could be awarded grades based on the forecast grades sent by their teachers, to some extent, this would not represent the true performance of the candidates as some teachers may be biased and either over-grade or under-grade their students while predicting scores for them. Other International examinations that were canceled due to COVID-19 include International Baccalaureate, Scholastic Aptitude Test (SAT) and American College Test (ACT).

Apart from these, students who sat for Senior Secondary Certificate Examination (WAEC) in the West African countries had their examinations postponed. The implications of this on candidates is that, thousands of students will be forced to defer the start of their studies for their undergraduate studies to a later year.

Without mincing words, the Covid-19 pandemic has caused the largest disruption of education in history, having already had a near universal impact on learners and teachers around the world, from pre-primary to secondary schools, technical and vocational education and training (TVET) institutions, universities, adult learning, and skills development establishments. By mid-April 2020, 94 % of learners worldwide were affected by the pandemic, representing 1.58 billion children and youths, from pre-primary to higher education, in 200 countries. The ability to respond to school closures changes dramatically with level of development: for instance, during the second quarter of 2020, 86 % of children in primary education have been effectively out of school in countries with low human development – compared with just 20 % in countries with very high human development.

A UKAID (2020) report of a survey of the experiences and opinions of educators and technology specialists, *The effects of covid-19 on education in Africa...*

Writing on: *Coronavirus (Covid-19): The Lockdown Strategy in Nigeria*, Ekienabor Ehijiele (2020) stated that, authorities around the world had resorted to the lockdown strategy to curb the spread of the virus. Therefore, the study aimed at investigating the effect of the lockdown strategy in curbing the spread of the COVID-19 virus and its multiplier effects especially on the educational sector in Nigeria.

2.1.2 Phases of Lockdown in Nigeria

The primary aim of lockdowns is to flatten the covid-19 curve through a persistent reduction in the confirmed cases, and ensure the those infected by the virus quickly recovered from the virus. During lockdown people are expected to stay at home. Also, location of contacts such as schools, (including polytechnics and universities), hotels, clubs, and religious centres are closed, social gatherings involving above 20people, are prohibited and economic activities involving physical interactions are halted. (*World Bank Group, 2015*)

The guideline for the second phase of lockdowns which was in place between June 2nd and 29th 2020, include that: nationwide curfew remained in place, but the time changed to from 10:00pm to 4:00am daily. Healthcare workers and journalists are exempted from the curfew. Banks may resume normal working hours. However, this second phase was extended by the President, Muhammadu Buhari for four more weeks.

Following the global practice, a nationwide lockdown was announced in Nigeria on 30th march 2020 to take immediate effect in three states of the federation, namely: Lagos, Ogun and Abuja. This was further extended for two weeks with the inclusion of Kano on 27th April, 2020. Thus, the first phase of lockdown in Nigeria was announced by the President on 27th April, 2020 with effect from May 4th to 17th, 2020 spanning two weeks in FCT, Lagos and Ogun states.

2.1.3 Impact of Covid-19 on Education in Sub Saharan Africa

Covid-19 deadly disease has resulted to total shutting of schools in about 215 countries all over the world with 91.4% of the total number of enrolled learners in these countries momentarily mandatory out of school (UNESCO, 2020). It is accounted that over 1.6 billion students transversely the world which are presently obliged to stay out of schools as social distancing is being enforced locally and regionally around the world in order to enclose the extent of coronavirus disease. Besides, statement shows that lockdown of schools is added importance in some continents such as Africa, South America and in some parts of Europe (UNESCO, 2020).

It can be said that Africa is one of the continents which educational systems have been typically affected by the deadly disease as more that 98% of teaching and learning cannot be performed suitable to country-wide lockdown in these continents in the shutting of schools across Sub Sahara Africa, of which over 91 percent are primary and secondary school learners.

In a short time, COVID-19 has disrupted the landscape of learning in Sub Sahara Africa by limiting how students can access learning across the country. However, apart from the pharmaceutical interventions, other preventive measures like using of facemask, washing of hands, social distancing has been seen to be most effective ways of minimising the spread of COVID-19. The effective implementation of social distancing demands that schools be closed for as long as each government from different countries are certain that the pandemic has been curtailed enough for the safety of learners and teachers before resuming to classes.

2.2 Empirical Review

Ngogi & Mahaye (2020) argued that long periods of learning would be lost for as long as the closures lasted. This is evident as different cases are recorded daily. Kekić et al. (2016) reported that schools losing long periods of learning because of the disease outbreak could upshot to both chronological and stable smash up on educational system. The temporal damage includes disruption of curriculum which could take a long time to be recovered, while the undeviating spoil which include the actuality that some students may never come anymore to school even when the infection outbreak ended. This view cannot be truer than in Nigeria, especially in southwestern Nigeria, the study area, where most parents are struggling to send their children and wards to school, such that a little huddle will mark the end of education for such children.

Digital Global Overview Report (2020) opined that about 60 % of people from Nigeria are not associated to the internet. The data for mobile phones, which could also be used as a learning intermediary, are more hopeful. According to the report, around 169.2 million people, representing 83% of Nigerians have right of entry to mobile phone connections. However, of this figure, 50 %, (which is around 84.5 million people), live in municipal areas. For the populace with access, the quantity would be twisted towards elevated socio-economic households and urban households; an awe-inspiring preponderance of whom are private school students who already have a learning benefit over their public-school peers. For children from poorer backgrounds who tend to have less access to internet connectivity, computers, and other devices, and reside in rural areas where local languages take dominance over English, ICT-learning uptake will be limited.

3. Methodology

This article essentially adopted the secondary source approach to data collection. Consequently, the bulk of data utilised for the study were sourced from published articles, books, and internet and analysed by descriptive and content analysis.

4. Data Analysis and Discussion on Findings

At the institutional level, a number of Universities are offering data bundles to their students and staff. Going digital effectively requires substantial coordination with, and swift support from, institutional and national service providers, regional entities, international partners, NGOs, the private sector and ICT providers to rally behind such tools and platforms at little or no cost. It is imperative to seriously seek alternative means and approaches in order not to leave behind students with little or no access to electronic communication. The digital divide across southwestern Nigeria, the study area, has to be strategically and systematically managed. Reaching out to millions of 'marginalised' students must become a thing of urgent priority in this time of crisis. While this is taking shape, institutions need to develop a comprehensive plan and a rigorous follow-up scheme to ensure that academics and students make proper use of digital platforms. This task cannot be left solely to the discretion of individual actors.

It is however a misleading concept to reason that online learning could be effective by just posting a lecturer's notes online or having a video recording of the lecture. So far, this is what is generally happening at hand. Knowledge has revealed that eminent online learning need that the teaching materials are prepared by specialized instructional designers, which the lecturers are instructionally trained for bringing the program, and the students are equally uncovered to the instruction of online learning.

The gullible online freedom will have a contact on the value of the programmes. This is ill-fated at a time when key deeds have been made in improving the dominance of teaching and learning in advanced educational institutions in the study area. The programs that will most horribly be affected by the security lockdowns will be science and technology. This is because; students will not have access to laboratories for their practicals. Thus far, science and technology programs are the ones that are most vital for the nation's growth and development. The questions that would probably agitate our minds in this study may be: how can higher educational institutions (polytechnics and universities in particular) in the study area find choice to proceed to use laboratories and subsequently, how can they weaken the outlay of poor-quality programmes as a result of unplanned online freedom? Diversified means of educational delivery, in particular a non-residential model may become more mainstream, more acceptable and more respectable. Secondary schools which feed students to higher education institutions have also been closed due to the covid-19 induced security lockdown. Already, it had been observed that with the high increase in enrolment in secondary schools, resulting from measures taken to improve access, the quality of students entering higher educational institutions had declined. The circumstances will be provoked with the closure of schools, and higher educational

institutions will have to devise ways and means to cater for a poorer quality of student intake, perhaps by running remedial courses in the first year.

Also, end-of-secondary school examinations are being cancelled. What approaches should higher educational institutions adopt in selecting their next troop of students if assessment results are not available? Here, a general advance covering the whole education sector needs to be adopted.

5. Conclusion

The halt in business activities in the country as a result of the pandemic has rendered many penniless and unable to provide for themselves the basic amenities needed for the duration of the lockdown brought about as a result of COVID-19. The school system was affected by the lockdown and has resulted in disruption in the school calendar for schools and colleges in the southwestern Nigeria and the world in general.

Consequently, the article concluded that, an effective e-learning method that is backed up with workable policies, may rectify this imbalance in the educational sector in the study area and the country in general.

6. Recommendations

To mitigate the effect of security lockdowns and the covid-19 pandemic in general on education and the continuity of learning for students in southwestern Nigeria,

1. Ministries of Education in the area should mount up campaign to adopt distance learning mode through radio lessons in FM radio stations and TV lessons in TV stations.
2. Students who live in remote villages should arrange and move to nearest big town where there is connectivity, download the lecture and learning materials, assignments and examinations questions and go back to their villages to work on them and submit them via the same medium or other pre-arranged media.
3. Consequently, attitudinal change is important from all stakeholders. Already many universities give official email addresses and also form WhatsApp groups for students. Such media can be used as alternatives to send materials and examination questions to students. This could be a viable option.
4. The various unions and associations at the tertiary institutions should support their managements and students in this regard.
5. High quality educators have been compelled by current circumstances to use digital tools efficiently to deliver their courses.
6. Reaching out to millions of 'marginalised' students must become a thing of urgent priority in this time of crisis.
7. Educators should join online professional learning communities to pursue in-service career training to stay in touch with the trends, share tips and best practices to achieve the goal of an evolved and high-quality standard of education.
8. Instructors could invite colleague educators from another university to deliver a guest lecture to their students.

9. In order to make education more meaningful to all students, education should be made more accessible and less expensive. Education should be a right and not a privilege.
10. There should be deliberate policy of government especially by states within the area covered in this study, to see to it that the curriculum are harmonized to suit the present reality.

References

- Adotey, S.K. (2020). What will higher education in Africa look like after COVID-19? World Education Forum <https://www.weforum.org/agenda/2020/06/higher-education-africa-covid19-coronavirusdigital-online/> Africa News. (2020). Retrieved from <https://www.africanews.com/2020/06/17/coronavirus-in-africabreakdown-of-infected-virus-free-countries/> Accessed on 17th June, 2020.
- Azzi-Huck, K., and Shmis, T. (2020) *Managing the impact of COVID-19 on education systems around the world: How countries are preparing, coping, and planning for recovery*. Elsevier, 2(4), 3-8.
- Bester, G., and Brand, L., (2013). The effect of technology on learner attention and achievement in the classroom. *South African Journal of Education*, 33(2), 1-15.
- Brooks, F. (2014). *The link between pupil health and wellbeing and attainment*. Public Health England, Wellington House, 133-155 Waterloo Road, London SE1 8UG Tel: 020 76548000 www.gov.uk/phe.
- Denscombe, M. (2008). Communities of Practice: A research paradigm for the mixed methods approach. *Journal of Mixed Methods Research*, 2(3), 270 – 283.
- Digital Trend. (2020). Every single stat you need to know about the internet”, Retrieved from <https://thenextweb.com/podium/2020/01/30/digital-trends--2020-every-single-stat-you-need-to-know-the-internet> Accessed on 14th June 2020.
- Du Plessis, P. (2014). Problems and complexities in rural schools: Challenges of education and social development. *Mediterranean Journal of Social Sciences*, 5(20), 1109-1117.
- Du Plessis, P., and Mestry, R. (2019). Teachers for rural schools – A challenge for South Africa. *South African Journal of Education*. 39, 1–8.
- Dzansi, D.Y. and Amedzo, K. (2014). Integrating ICT into rural South African schools: Possible solutions for challenges. *International Journal of Educational Science*, 6(2), 341 – 348.
- Dziuban, C., Graham, C. R., Moskal, P., Norberg, A., and Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, 15(3), 2-7. Retrieved from <http://doi.org/10.1186/s41239-017-0087-5>.
- Dziuban, C., Graham, C.R., Moskal, P., Norberg, A., and Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, 1, 15-18. Retrieved from <http://doi.org/10.1186/s41239-017-0087-5> Accessed on 10th June 2020.
- Education International News. (2020). COVID-19 tracker, Published 25/03/2020. Accessed online (18/4/2020), From: <https://www.ei-ie.org/en/detail/16669/education-international-covid19-tracker>.
- Fowler, J.H., Hill, J.S., Levin, R., and Obradovich, N. (2020). The Effect of Stay-at-Home Orders on COVID-19 Infections in the United States. Unpublished.

- 10.110/2020.04.13.2..63628. Garrison, D. R., and Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95-105.
<http://dx.doi.org/10.1016/j.iheduc.2004.02.001>
- Graham, C.R. (2007) *Blended learning systems: Definition, current trends and future directions*. Handbook of blended learning: Global Perspective, local designs. San Francisco, CA: Pfeiffer Publishing. pp. 3-21.
- Hatsu, S., and Asamoah, E.S. (2020). Online teaching, learning and assessment: A primer for tertiary education in Ghana.<https://www.myjoyonline.com/opinion/online-teaching-learning-andassessment-a-primer-for-tertiary-education-in-ghana/>
- Hrastinski, S. (2019). *What do we mean by blended learning?* *Technology Trends* Washington, 63(5), 564-569.
- Kathmandu, K. (2020). COVID-19 educational disruption and response: Continuation of radio education for secondary level students in Nepal. UNESCO.
<https://en.unesco.org/news/covid-19-educational-disruption-and-response-continuation-radio-education-secondary-level>
- Kekić, D., and Miladinović, S. (2016). Functioning of educational system during an outbreak of acute infectious diseases. Retrieved from:
<https://www.researchgate.net/publication/309728224>.
- Khan, A. I., Shaik, M. S., Ali, A. M., and Bebi, C. V. (2012). Study of blended learning process in education Context. *International Journal of Modern Education and Computer Science (IJMECS)*, 4(9), 20-23.
- Kuwonu, F. (2020). Radio Lessons: In Africa, schools are closed but learning goes on.<https://www.un.org/africarenewal/magazine/may-2020/coronavirus/africa-schools-are-closed-learning-goes>
- Mba, J.C. (2020). Challenges and Prospects for Africa's Higher Education. Association of African Universities.<https://www.globalpartnership.org/blog/challenges-and-prospects-africas-higher-education>
- Mirriahi, N., Alonzo, D., and Fox, B. (2015). A blended learning framework for curriculum design and professional development. *Research in Learning Technology*, 2, 18-23.
- Ngogi, E.M. (2020). *The Impact of Covid-19 Pandemic on Education: Navigating Forward the Pedagogy of Blended Learning*. University of Pretoria, South Africa, 5, 4-9.
- Nnabuike E.K., Aneke M.C., and Otegbulu R.I. (2016). Curriculum implementation and the teacher: issues, challenges and the way forward. *International Journal in Commerce, IT & Social Sciences*, 3(6), 41 – 48.
- Onwusuru, M.I., and Ogwo, B.A. (2019). Cloud-based portal for professional development of technology educators in Nigeria and the emerging virtual workplace. *International Journal of Arts and Technology Education*, 11(01), 1 – 17.
- Policy Brief: Impact of COVID-19 in Africa (2020).Retrieved from
<https://drive.google.com/file/d/17JYRwXNgsZ3PUInzcF2o3RNLkUEm5qts/view?usp=drivesdk> Accessed on 16th June 2020
- Pridmore, P. (2007). The impact of health on education access and achievement – A crossnational review of the research evidence. CREATE Pathways to Access Research Monograph No 2. Brighton: University of Sussex.
- Siemens, G., Gašević, D., and Dawson, S. (2015). Preparing for the digital university: A review of the history and current state of distance, blended, and online

- learning. Retrieved from <http://linkresearchlab.org/PreparingDigitalUniversity.pdf>. The Head of Education Committee (HEDCOM). (2020). South Africa. Framework for a Curriculum recovery plan – post COVID-19. 11 April 2020.
- Thelma, O., and Adedeji, Adeniran. (2020). Covid-19: Impending Situation Threatens to Deepen Nigeria's Education Crisis, Retrieved from <http://cseafrika.org/covid-19-risk-control-measures-threatens-to-deepen-nigerians> Accessed on 12th June 2020. UNESCO. (2020a). COVID-19: a global crisis for teaching and learning. <https://en.unesco.org/news/startling-digital-divides-distance-learning-emerge> UNESCO. (2020b). Monitoring COVID-19 caused by school and University closure. <https://en.unesco.org/covid19/educationresponse>
- United Nations Education Scientific and Cultural Organization. (2020). COVID-19 Educational Disruption and Response. Retrieved from: <https://en.unesco.org/covid19/educationresponse> United Nations Education Scientific and Cultural Organisation. (2020). Covid-19 Education Disruption and Response. Retrieved from <https://en.unesco.org/covid-19/educationresponse> Accessed on 10th June 2020.
- Viner, R.M., Russell, S.J., Croker, H., Packer, J., Ward, J., Stansfield, C., Mytton, O., Bonell, C., and Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *Lancet Child Adolescent Health*, 4, 397–404
- Wikramanayake, G. (2014). Impact of Digital Technology on Education. Retrieved from: <https://www.researchgate.net/publication/216361364>.
- World Bank Blog (18 March 2020); Retrieved from: <https://blogs.worldbank.org/education/managing-impact-covid-19-education-systems-around-world-how-countries-are-preparing>
- World Economic Forum (WEF). (2020). COVID-19's staggering impact on global education; Global Agenda. Accessed Online (18/04/2020), From: <https://www.weforum.org/agenda/2020/03/infographic-covid19-coronavirus-impact-global-education-health-schools/>.
- Worldometer. (2020). <https://www.worldometers.info/coronavirus/#countries>
- Zhong, B.L., Luo, W., Li, H.M., Zhang, Q.Q., Liu, X.G., and Li, W.T. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International Journal of Biological Science*, 16(10), 1745-1752. Zhong, B.L., Luo, W., Li, H.M.,
- Zhang, Q.Q., Liu, X.G., and Li, W.T. (2020). Knowledge, Attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International Journal of Biological Science*, 16(10), 1745-1752.