

Life is Too Fast: Looking into South Korea's Antibiotics Overconsumption

Justin Park

ABSTRACT

South Korea today is said to be plagued with the nationally pervasive social pressure of having to get things done fast. The speed of everything has created a farcical nickname of this society as *bballi bballi* society, stemming from the Korean word *bballi*, meaning fast. While it is widely accepted among scholars today that the culture of *bballi bballi* is manifested in many aspects of Korean society, there exist only a few studies that explore its implications in the healthcare sector. In this article, the author raises the question of how this high-pressure pace manifests in South Korea's healthcare system with a special focus on patient access to antibiotics. In South Korea, doctors prescribe antibiotics frequently and easily, even for simple ailments or symptoms that have not been tested for bacterial nosology. Interestingly, this goes hand in hand with the nation's awareness of the harms of overprescription of antibiotics. By way of synthesizing the currently available studies in diverse areas of public health, cultural anthropology, and popular cultural studies, this author attempts to address the intersection between the cultural norms of fast pace and its manifestation in healthcare system.

ANTIBIOTICS OVERCONSUMPTION IN SOUTH KOREA

Public health data and statistics often serve as crucial and reliable indicators of the general welfare and prosperity of a nation. This is clearly demonstrated in the case of South Korea, a country noted for its exceptional economic growth and social development in the past several decades. As a salient reflection of Korea's recent advancements, total life expectancy at birth has increased from 65.8 in 1980 to 81.0 in 2011. The total mortality rate for males dropped precipitously from 307.1 per 1000 adults in 1980 to 95.0 per 1000 adults in 2011; likewise, the rate for females decreased from 152.7 to 32.0.¹ As such, various aspects of public health among the South Korean population exhibit a trend that is overall optimistic and promising. Against this backdrop, however, there are many misuses and abuses of health-related resources occurring on a nationwide scale in South Korea. Most prominent among them is the alarming rate of overconsumption of antibiotics.

The high rate of antibiotics consumption in South Korea is a thoroughly documented phenomenon. The Organisation for Economic Cooperation and Development, of which South Korea is an official member,

reveals that South Korea's defined daily dosage per 1,000 inhabitants is 31.7. While this dataset collected in 2014 is not fully comprehensive as it does not include select few OECD members including Japan, it suggests South Korea's rate of antibiotics consumption to be one of the highest in the world—Canada is at 17.3, the UK is at 19.7, and Italy is at 29.1 (a close second to Korea).² The Center for Disease Dynamics, Economics & Policy provides further evidence on the validity of Korea's excessively high antibiotics consumption rate. According to the CDDEP, which utilizes a different methodology and algorithm from those of OECD to compute their figures, South Korea used 28,295 units of antibiotics per 1,000 inhabitants in 2014, while its peer East Asian countries reported significantly lower numbers—Japan used 17,170 units, while China used 9,894.³

Antibiotics are powerful chemical aids used to facilitate treatment of patients infected with microbial pathogens, but when bacterial nosology is considered, overuse of antibiotics poses a significant threat to the integrity of human body as it can result in the development of resistant bacteria.⁴ In this light, the national level of overprescription and overconsumption of antibiotics posits

a serious long-term negative effect on South Korea's public health. Introduction of resistant bacterial strains is a major health risk, and studies today show that South Korea may already be in grave danger. Isolates of *Streptococcus pneumoniae*, a common bacterial pathogen known to cause respiratory tract infections and pneumonia in humans, that were collected in South Korea exhibited the highest rate of resistance to antibiotics among all geographical areas that were included in the study. About 87.6% of *S. pneumoniae* strains of *S. pneumoniae* found in South Korea were resistant to erythromycin, which is one of the most common antibiotics available in the global pharmaceutical market, whereas only 4.7% of strains found in Sweden were shown to be resistant.⁵ Such prevalence of resistant strains in South Korea is a force to be reckoned with, as there are fewer therapeutic options available for patients with infections caused by resistant bacterial strains.⁶

Unfortunately, it appears that the pattern of antibiotics overconsumption observed today in Korea will continue to be the norm in the future. Kyungwon Lee of the Research Institute of Bacterial Resistance at Yonsei University predicts that South Korea will continue to observe increasing strains of bacteria with resistance to antibiotics currently available in the market. Lee cautiously questions whether the pharmaceutical industry would be able to keep up with the constant emergence of resistant strains and strongly recommends that resources be invested in developing new means to combat this pressing concern.⁷

Despite the overpowering wealth of data supportive of Korea's problem with antibiotics consumption, currently, scholarly attempt at dissecting the phenomenon and identifying the cultural undercurrent associated with this overuse is conspicuously lacking. The intent of this study is to fill this void by analyzing the current situation in connection to South Korea's unique culture and present a synthesis of critique and prospect. The intention of this research is not to single out a clear-cut cause for the overconsumption of antibiotics but rather to examine the way cultural and social factors and certain national behavior, if any, influence and reinforce each other. Here, I am particularly interested in *bballi bballi* culture which

has been lately attracting attention among researchers of Korean society and its cultural norms. *Bballi bballi* means "fast and faster." Critics say that South Korean society is driven by the urge to get things done fast, at times at the expense of quality of work. Thus, this article will attempt to address the intersection between the cultural norms of fast-paced life and its manifestation in healthcare systems by synthesizing the currently available studies in areas of public health and popular cultural studies.

THE DEMANDS OF KOREAN PATIENTS

While a formal and comprehensive approach to analyze the cause of Korea's antibiotics overconsumption is currently unavailable, several accounts presented by doctors and professionals in the past provide us a helpful clue with regard to the remarkable role culture may play in this matter. In 2006, Korean congresswoman and pharmacist Bokshim Jang urged the public for a change in the nation's attitude toward the use of antibiotics by stating that Korean citizens have the tendency to want to get better faster, despite the fact that many ailments, especially the common cold, are viral in nature and require time for treatment.⁸ An anonymous doctor at a clinic in Jeju City, which reported a 95.96% antibiotic prescription rate in 2005, was quoted in an article as saying that many patients prefer strong and effective antibiotics for the supposed faster healing time, and regardless of his professional opinion, he finds himself unable to deny the patients' demands.⁹ Similar anecdotal accounts, though many are attributed to anonymous sources, are found across a plethora of interviews with physicians. Weekly DongA (a major print news source in Korea), in its comprehensive exposé on antibiotics overconsumption in Korea, details an anonymous doctor's complaints regarding patients' incessant and stubborn demands for strong antibiotics. The doctor adds that patients often justify their needs of antibiotics by sharing about their "upcoming exams," and although the doctor is fully aware of the negative effects of unnecessary use of antibiotics, he is not willing to argue with the patient.¹⁰

There exists a recurring theme in these accounts made by doctors and public health professionals—they suggest

that patients' desire to quickly get better wrongly translates to their uninformed and misled demands for antibiotics prescription. It is important to note that patients "demanding" antibiotics from their doctors is not an occurrence observed exclusively in Korea. A group of American family physicians published a comparative case study paper in 2001 in the *Journal of Family Practice* identifying several ways in which patients pressure physicians for an antibiotics prescription in acute respiratory infections, or the common cold.¹¹ This study highlights the influence patients' behavioral cues and verbal demands have on the clinician's decision-making on antibiotics prescriptions. While the findings suggest that it is not only the patients in Korea that may prefer strong antibiotics to other forms of medication or lack thereof, the cases discussed in this U.S.-based study do not include one critical element that is almost ubiquitously mentioned in the accounts provided by Korean doctors—the element of time and urgency, as shown in the patients' apparent need to get better faster. This element of speed deserves a close and more nuanced inspection in the context of Korea's unique culture.

WHAT IS BBALLI BBALLI?

The emphasis on efficiency and speed is an all too familiar concept in South Korea, where the social pressure of having to get things done fast is said to be nationally pervasive.¹² This cultural norm of speed is referred to as *bballi bballi* by both sociologists and laymen alike—the nickname stems from the Korean word *bballi*, meaning fast.¹³ In currently available literature on *bballi bballi*, scholars are split on the origins of this lifestyle: Some attribute its rise to Korea's extensive history of colonialism, warfare, and militarism, while some claim that Korea's aggressive approach to economic development, particularly through the means of exportation, naturally promoted and emphasized the advantages of being fast and efficient.¹⁴ Within these varying theories exists a universal agreement that this fast-paced lifestyle is largely driven and perpetuated by competition.

While *bballi bballi* may have some rather farcical and superficial symptoms (such as the common stereotype of

Koreans always eating too fast or being impatient with long wait times), this social phenomenon of high-pressure pace has far more resounding and profound implications. On one hand, *bballi bballi* is commonly regarded as the fundamental drive that thrust the impoverished and war-torn South Korea of the 1950s into its period of immense economic recovery and development in the subsequent decades, a progress that was so astounding that it was later dubbed "Miracle of the Han River".¹⁵ On the other hand, *bballi bballi* is often seen as a toxic characteristic of Korean society with destructive outcomes due to the nation's prioritization of getting things done quickly over taking the time to assure quality and safety. This has been witnessed in several forms of tragedy in different sectors of society. Buildings built with poor architectural integrity have collapsed (ex. Sampoong Department Store in 1995, Gyeongju Resort Gym in 2014). Korean academia took a critical hit when one of Korea's most renowned scientists was caught committing severe ethical violations to meet the public's high expectations for revolutionary results in a short time. Today in Korea, one factory worker dies every five hours from various industrial disasters often caused by ignoring regulations and bypassing precautions.¹⁶

As such, it appears that Korea's problem with antibiotics overconsumption can also be interpreted as one of many harmful byproducts of *bballi bballi*. If there truly is a substantial correlation between the two phenomena as suggested by the aforementioned accounts by doctors and professionals, what circumstances and mechanisms are at play? How does a nation's tempo of life translate to its citizens' antibiotics prescription and consumption patterns?

THE PRESSURE OF BBALLI BBALLI ON KOREAN PATIENTS

The most obvious logic behind the association between *bballi bballi* and antibiotics overconsumption is as follows: people need to get better faster to keep up with the society's pace, sickness becomes a hindrance they cannot afford, and those who get sick demand antibiotics for their supposed effect on facilitating

recovery. We will first inspect how the culture of *bballi bballi* affects the attitude and behavior of those who become sick in Korea.

OECD statistics indicate that among its peer member nations, South Korea is generally overworked while grossly undercompensated. In 2015, South Korea recorded 2,113 average annual hours worked per worker, which puts South Korea at number three among all OECD member nations, far above the average of 1,766.¹⁷ In the same year, the average annual income for South Korea was far lower than the OECD average; South Korea recorded \$33,110, while the average was \$41,253. Kyushik Bae, a researcher at the Korea Labor Institute, explains that intensive labors and low compensation were critical ingredients in South Korea's successful industrialization, and this unhealthy element of the Korean workforce has been perpetuated with little to no improvement.¹⁸ In fact, the idea of reducing labor hours by means of implementing new laws was recently opposed by various Korean corporations under Park Geun-hye administration.

As represented by above analysis, the South Korean workforce places a significant emphasis on the sheer number of work hours put in by the workers, and as a result, time is a valuable yet limited resource for many. This nationwide disregard for personal wellbeing in exchange for longer work hours and higher productivity may be the very force that pushes sick Koreans to prioritize faster healing time over proper recovery. The rate of preventative medicine in South Korea serves as further data supportive of this pattern of people prioritizing work over personal health. In South Korea, while the pediatric vaccination rate is exceptionally high, the seasonal influenza vaccination rate is relatively low (21.7%). While a myriad of social factors are thought to influence one's decision-making in flu vaccinations, it appears that employment is a significant factor to consider, especially among women. Statistical analyses based on surveys conducted between 2007 and 2010 indicate that unemployed women exhibited a vaccination rate that is 1.195 times higher than that of employed women.¹⁹

A column published in a reputable Korean feminist journal even claims that Koreans must fight for their "right

to be sick." The columnist, who is active under the pen name Banda, asserts that the Korean workforce today does not guarantee the workers' basic right to take the time to recover from their sickness, and that its hyperproductive atmosphere puts an unjustified blame on those that fall ill. Banda claims that in many Korean work settings, where collectivism is the dominant ideology, taking sick days is interpreted as lacking professionalism due to the impact on work productivity that is caused by an "irresponsible" absence. Banda shares her concerns for students in Korea as well, who are similarly pressured to disregard their health in their hypercompetitive academic environment. Missing a day of cram school would be a disadvantage among competing classmates, so students must fight through sickness with the help of strong medication.²⁰

PUBLIC KNOWLEDGE ON THE SCIENCE OF ANTIBIOTICS

If Koreans desire a faster cure, why do they consider antibiotics to be the cure—all they need at times of illness? The incontrovertible truth in medicine is that antibiotics are only effective when the ailment is of bacterial etiology. The upper respiratory infection, which is one of the most frequently diagnosed ailments and often referred to as the common cold, is often viral in nature and requires time for the body's immune system to naturally fight the infection in order to recover. Unfortunately, overwhelming evidence suggest that the Korean public prefer antibiotics despite this clearly established biological distinction. In fact, in 2015, 43.52% of the clinics in South Korea are reported to have prescribed antibiotics for patients with upper respiratory infections, when bacterial agents that cause this very infection are exceedingly rare.^{21,22}

There may be a simple and straightforward explanation for this phenomenon—many Koreans simply do not know the science of antibiotics. The lack of public knowledge on antibiotics and the misconception that antibiotic consumption leads to faster healing time may be pervasive among the Korean public. In an effort to gauge the public's awareness on this matter, a survey was conducted from 300 South Korean subjects older than 20. Only 23.3%

of respondents clearly knew the difference between virus and bacteria, and 22.0% claimed that the two are identical in nature. In fact, 23.7% claimed that antibiotics are used only for viral infections, while 29.0% responded that they can be used for both bacterial and viral. Lastly, only 30.0% agreed that taking antibiotics does not have any effect on the recovery period for common cold symptoms.²³ In a separate study that targeted only middle school and high school adolescents, 20.3% responded that antibiotics can kill viruses, while 35.6% responded that antibiotics could cure their cold faster.²⁴ This lack of public knowledge among Koreans becomes especially more concerning when analyzed vis-a-vis peer nations. For example, in the Netherlands, 44.6% of 935 responders aged 16 and over reported that they are aware of antibiotics effectiveness in treating bacterial but not viral infections, and 81.1% did not believe that taking antibiotics helps patients feel better sooner if they have the common cold.²⁵

The lack of public knowledge among Koreans is evident, yet many researchers and doctors assert in unison that proper education on the dangers of antibiotics is severely lacking in South Korea.²⁶ One of the only government-sponsored efforts to educate the public on the correct use of antibiotics took the form of a nationwide campaign in 2011 organized by the Korean Society of Infectious Diseases and the Korean Society of Chemotherapy.²⁷ This campaign, which aimed to educate both the public and healthcare professionals in light of the antibiotics crisis in Korea, targeted mainly on distribution of educational materials. However, it appears that the success of and support toward this two-year campaign was overall underwhelming. Today, their official website is no longer accessible, and any form of data on the progress of this campaign since its inception is unavailable to the public. This lack of success is especially concerning when compared to similar educational campaigns launched in other countries, such as the U.S. and its “Get Smart About Antibiotics” project that has been continuously funded and actively supported since 1995.²⁸

Many doctors themselves are not making appreciable efforts to educate patients and effectively curb the antibiotics

consumption rate. The aforementioned study by Yoo et al. indicates that 71.7% of people surveyed either responded “never” or “almost never” on whether their doctor ever explained to them the effects of antibiotics in regards to the treatment of their ailments.²⁹ On the other hand, a study on the public’s perception on drug safety shows that regardless of age and educational level, patients most strongly trust the information received directly from their personal physicians. They trust information given by their doctors much more than information provided by alternative sources including pharmacists, peers, the Internet, and health-related media.³⁰ If there exists this high level of faith toward physicians by the Korean public, why do so many doctors neglect to assume the responsibility of educating patients on antibiotics and consequently deterring patients from unnecessarily consuming antibiotics?

In Weekly DongA’s exposé on antibiotics use in Korea, infectious diseases specialist Youngkoo Song of Yonsei School of Medicine provides the following insight:

Unless the Korean healthcare system is reformed, doctors will continue to prescribe antibiotics despite their awareness on Korea’s problem with its overconsumption and misuse. Rather than dealing with a possible malpractice suit for risking the 10% chance of the infection being viral, we can save time by just prescribing antibiotics.³¹

We see this element of “time” making its appearance yet again in the doctors’ attempt to explain their antibiotics prescription behavior, but Song’s explanation suggests that the current system of Korean healthcare is also a major factor to consider.

THE CURRENT SYSTEM OF KOREAN HEALTHCARE

The entire population of South Korea today benefit from universal health coverage that includes most medical services and benefits from a relatively low co-pay. This centralized system of healthcare in South Korea also allows patients free choice of health-care providers without any form of gatekeeping—for example, a patient may visit a

specialist without a primary care consult, and the patient may choose between private clinics and large general hospitals according to their preference. Since the inception of universal population coverage in 1989, South Koreans have relished a healthcare system with a high degree of affordability and freedom. This in turn catalyzed a boom in the number of private clinics to meet increased demand.³² In 2015, there were over 28,000 private clinics operating in South Korea with particularly high density observed in urban areas.³³

This high concentration of private clinics in turn created a competitive environment for doctors where patient volume directly translates to profit, especially since the fees assessed to the patients for insurance-covered services and procedures are strictly set by the National Health Insurance Service (NHIS). Simply put, doctors do not have the financial incentive to take the time to convince the patients that antibiotics are not an effective mode of treatment. The competitive field of healthcare providers encourages and enforces short consultation times to result in higher patient volume, and therefore higher profit. In fact, according to the analysis conducted by the NHIS, the average outpatient consultation time at a general hospital in South Korea is 4.2 minutes, whereas an equivalent study in the U.S. revealed that an average consultation lasts 23 minutes.^{34,35} For a doctor to correctly assess the etiology of the infection and properly educate the patient on the dangers of antibiotics, four minutes seems far too short. In regards to this matter, Hongbin Kim of Seoul University College of Medicine shares the following insight during his interview with *Weekly DongA*: “In large healthcare settings like university hospitals, it is possible to verify if the cold is viral or bacterial through certain tests. However, private clinics do not have the ability to do so. The low cost of healthcare means doctors have to see many patients quickly, and it is very difficult for us to take the time to talk and diagnose each individual patient.”³⁶ This vicious cycle of competition among doctors and reinforcement of speed and efficiency of their interactions with patients can be interpreted as one of the crucial manifestations of the *bballi bballi* culture in the context of Korean healthcare.

In addition, because medical services are affordable with no gatekeeping, patients who demand antibiotics but are not given them are free to visit any other doctor among the plethora of doctors available in the neighborhood. If patients are already culturally primed to prefer speed and efficiency while unaware of the health risk of antibiotics, the popularity of doctors with short consultation times that freely stamp out antibiotics prescriptions would inevitably rise.

The association between the strong presence of private clinics in South Korea and high antibiotics prescription rate is supported by another statistic: the negative correlation between the size of the hospital and the rate of antibiotics prescription. Small private clinics exhibit the highest rate of antibiotics prescription, while large university hospitals exhibit the lowest.³⁷ This data comes from mandatory reports of antibiotics prescription rate submitted by every healthcare provider in the country as part of a new law regulated by Health Insurance Review and Assessment (HIRA). There may be varying factors that contribute to this phenomenon in addition to the aforementioned competition-driven system. For example, patients may feel more comfortable demanding certain medications from their personal doctors. Also, doctors in private clinics may not be as well educated on the subject of antibiotics overuse as medical specialists affiliated with large university hospitals. In fact, Chonnam National University Medical School Hospital, which reported the lowest rate of antibiotics prescription in the country, attributed their record low numbers to their recent emphasis on antibiotics education in their medical school curriculum.³⁸

Lastly, it is worth noting that doctors in Korea do not gain any direct financial gains from prescribing medication to patients. Since the major controversial reform of the South Korean healthcare system in 2000 establishing a strict division between the role of a doctor and a pharmacist, doctors can no longer sell and dispense medication. This means that private clinics may no longer sell the drugs that their own doctors prescribed; only pharmacists independent from the doctor's clinic may do so. This law was drafted partly to combat overprescription rates; however, this

new restriction has yielded only a slight decrease in the antibiotics prescription rate since its inception.³⁹ This suggests that financial incentives from pharmaceutical companies is a negligible influence on doctors' prescription behavior, although a few news reports suggest that illegal corporate drug promotion from pharmaceutical companies is still a problem in the Korean healthcare industry.⁴⁰

Given all this information present so far regarding the Korean healthcare system, it is not immediately obvious why doctors, who are supposedly pressured to increase patient traffic often at the cost of maintaining the quality of care and ethics of medicine, are generously prescribing antibiotics when it would be in their best interest to have the patients visit the clinic more frequently. The answer to this question appears harmless at first glance, but is actually quite alarming upon closer inspection. According to Hyeonjeong Yoo and colleagues, Korean doctors on average prescribe antibiotics in shorter regimens, usually for 2-3 days, than other countries whose doctors would normally provide a full prescription so additional visits would not be necessary.⁴¹ Korean doctors do so, not out of malicious intent to keep patients from fully recovering, but because the ease and affordability of doctor visits allow for the possibility of frequent consultations and therefore more intimate and careful monitoring of recovery process. Frequent visits also naturally translates to higher monetary gain for doctors. The concerning element of this system is that many patients often neglect to visit the doctor again once they see visible progress in their condition after completing their short antibiotics regimen, and many discontinue the regimen at will. Stopping the treatment early by not completing the appropriate course is highly dangerous as there is significant risk that all the bacterial pathogens have not been killed, allowing for mutation into antibiotic-resistant strains.⁴²

CONCLUSION

The core essence of *bballi bballi* was a recurring theme in this analysis of antibiotics overprescription in Korea. For many Koreans, time seems to be a resource that is perpetually in shortage, giving birth to a society driven

by the pressure of having to get things done fast. From this synthesis of various data, it is evident that this high-pressure pace has fascinating manifestations in the Korean healthcare sector.

My analysis suggests that the overall structure and economic framework of Korean healthcare system and the nationally pervasive culture of *bballi bballi* influence and reinforce each other, essentially resulting in a situation which creates the undesirable byproduct of antibiotics overconsumption. The hyper-competitive society of Korea pressures individuals to invest long work hours to their occupation and pressures those who become sick to overcome their illness in a short time. Patients are misinformed and under-educated about the science of antibiotics with meager educational efforts from the government, while doctors are financially disincentivized from investing the time in patient education.

It is unfortunate that there exists no single, simple solution that could effectively halt the unnecessary consumption of antibiotics in South Korea, especially when the deeply entrenched mindset of *bballi bballi* works as a significant force that contributes to the perpetuation of this unfortunate phenomenon. While it is impractical and irresponsible to expect doctors to alter their prescription patterns and patients to immediately become more informed, certain legislative steps can be made to engender a healthier environment for both patients and doctors.

The public health sector of the South Korean government must strengthen their educational program on antibiotics use for the general public, including adolescents, and utilize peer nations' successful campaigns as a model. A financial incentive is necessary for private clinics reporting decreased rates of antibiotics prescription, while a more robust procedure for auditing should be enacted for those with consistently high rates. The privatization of health care, which currently faces strong opposition and criticism from the public, may also be effective in discouraging patients from nonessential visits and alleviating the nationwide antibiotics consumption rate.

Last but not least, the prospect of Korean culture with regard to *bballi bballi* warrants a much broader discourse.

Currently, *bballi bballi* is largely acknowledged as a simple cultural attitude among Koreans, and very few sociologists today specialize in the study of this phenomenon. We see from our analysis that *bballi bballi* is profound in its cultural and social influences, affecting Korean people in both tangibly beneficial and toxic ways. Further scholarly investigation of *bballi bballi* is needed in order to address its unhealthy symptoms in modern Korean society.

NOTES

1. Lee, T., & Kim, C. (2015). *Health Systems in Transition: Republic of Korea Health System Review* (4th ed., Vol. 5) (S. Kwon, Ed.). Asia Pacific Observatory on Health Systems and Policies.
2. *OECD Health Database*. (2014). Retrieved November 15, 2016, from http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT. Organisation for Economic Co-operation and Development.
3. ResistanceMap - Antibiotic Use. (2014). Retrieved November 15, 2016, from <https://resistancemap.cddep.org/AntibioticUse.php>
4. Rodrigues, A. T., Roque, F., Falcão, A., Figueiras, A., & Herdeiro, M. T. (2013). Understanding physician antibiotic prescribing behaviour: A systematic review of qualitative studies. *International Journal of Antimicrobial Agents*, 41(3), 203-212.
5. Felmingham, D., Reinert, R. R., Hirakata, Y., & Rodloff, A. (2002). Increasing prevalence of antimicrobial resistance among isolates of *Streptococcus pneumoniae* from the PROTEKT surveillance study, and comparative in vitro activity of the ketolide, telithromycin. *Journal of Antimicrobial Chemotherapy*, 50, 25-37.
6. Antibiotic/Antimicrobial Resistance. (2016). Retrieved November 15, 2016, from <https://www.cdc.gov/drugresistance/>
7. Lee, K. (2011). Trend of Bacterial Resistance for the Past 50 Years in Korea and Future Perspectives - Gram-negative Bacteria. *Infection & Chemotherapy*, 43(6), 458-467.
8. Ryu, N. (2016, June 28). Hangsaengje namyong, maeyeon jeonsegye 70manmyeong 'samang' - hangook gowiheomgung bullyu [Misuse of antibiotics, 700,000 deaths per year - Korea classified as high risk]. *Newsis*. Retrieved November 15, 2016, from http://www.newsis.com/ar_detail/view.html?ar_id=NISX20160628_0014182189&cID=10401&pID=10400
9. Kim, H. (2007, February 26). Hangsaengje namyong ajikdo 'wiheom' [Misuse of antibiotics is still a risk]. *Jemin Daily*. Retrieved November 15, 2016, from <https://www.jemin.com:446/news/articleView.html?idxno=169229>
10. Kim, J. (2016, August 16). 16nyeongjae geudaero! 'hangsaengje o,namyong gukga' [No changes for 16 years! Nation of antibiotics overuse]. *Weekly Donga*. Retrieved November 15, 2016, from <http://news.donga.com/WEEKLY/Main/3/all/23/732579/1?>
11. Scott, J. G., Cohen, D., DiCicco-Bloom, B., Orzano, A. J., Jaen, C. R., & Crabtree, B. F. (2001). Antibiotic use in acute respiratory infections and the ways patients pressure physicians for a prescription. *Journal of Family Practice*, 50(10), 853-858.
12. Jung, S. W., Lee, Y. M., & Kim, O. J. (2014). Chop-chop culture in Chosun society. *Social Thoughts and Culture*, 29, 197-226.
13. Kang, J. M. (2010, January). The Cultural Politics of 'Ppallippalli': A Study on the 'Speed Communication' in Korea. *Journal of Communication Science*, 10(3), 47-80.
14. Ibid
15. Jwa, S. H. (2015). Finding the Solution to the Growth of Korean Economy: The Miracle of Han River and Its Lessons. *Korean Economy Forum*, 8(2), 33-51.
16. Lee, J. H. (2015, November 4). "Daechungdaechung, ppallippalli" 6bunmada 1myeongssing sanjaero 'sineum' ["Hurry and quickly," 1 person affected every 6 minutes due to industrial disaster]. *EDaily*. Retrieved November 15, 2016, from <http://www.edaily.co.kr/news/NewsRead.edy?news-id=01272646609562440&SCD=JG11&DCD=A00701>
17. *OECD Labour Database*. (2015). Retrieved November 15, 2016, from <https://stats.oecd.org/Index.aspx?DataSetCode=ANHRS>. Organisation for Economic Co-operation and Development.
18. Bae, K. S. (2013, October). Reduction of Long Work Hours in Korea. *Monthly Labor Review*, 7-18.
19. Park, M. B., Kim, C. B., & Joo, H. S. (2013). Factors influencing on influenza vaccination coverage. *The Journal of the Korea Contents Association*, 13(4), 300-311.
20. Banda. Apeul gwollireul bojanghara [Secure our rights to be sick] [Editorial]. (2016, October 12). *Ilda*.
21. Dasaraju, P. V., & Liu, C. (1996). Infections of the Respiratory System. In *Medical Microbiology* (4th ed.). Galveston, TX: University of Texas Medical Branch at Galveston.
22. *Pharmaceuticals Appropriateness Analysis - 2015* (Rep.). (2016). Health Insurance Review & Assessment Service.
23. Yoo, H. J., Song, Y. J., Lee, K. W., Lee, E. K., & Lee, J. A. (2009). Misuse of Antibiotics and Related Awareness of Consumers. *The Korean Association for Crisis and Emergency Management Review*, 1, 98-122.
24. Kim, S. S., Moon, S. M., & Lee, E. S. (2009). Adolescents' Knowledge and Attitudes towards Antibiotic Use. *Journal of Korean Academy of Fundamentals of Nursing*, 116(4), 421-429.
25. Cals, J. W., Boumans, D., Lardinois, R. J., Gonzales, R., Hosptaken, R. M., Butler, C. C., & Dinant, G. (2007). Public beliefs on antibiotics and respiratory tract infections: An internet-based questionnaire study. *British Journal of General Practice*, 57(545), 942-947.
26. Kim, S. S., Moon, S. M., & Lee, E. S. (2009). Adolescents' Knowledge and Attitudes towards Antibiotic Use. *Journal of Korean Academy of Fundamentals of Nursing*, 116(4), 421-429.
27. Chung, D. R., & Song, J. H. (2012). National Campaign for Appropriate Antibiotic Use in Korea. *Infection & Chemotherapy*, 44(3), 164-167.
28. Woo, H. J. (2012). The Worldwide Antibiotic Campaigns. *Infection & Chemotherapy*, 44(5), 338-342.
29. Yoo, H. J., Song, Y. J., Lee, K. W., Lee, E. K., & Lee, J. A. (2009). Misuse of Antibiotics and Related Awareness of Consumers. *The Korean Association for Crisis and Emergency Management Review*, 1, 98-122.
30. Ji, E. H. (2004). *Perception on Drug Safety and Channels for Drug Related Information in a Local Area* (Unpublished doctoral dissertation, 2004). Sookmyung Women's University.
31. Kim, S. J. (2016, September 5). Jeongook uiryogigwan hangsaengje sayong siltae hangsaengje & wae juuihaeya hana [National status on clinics' overuse of antibiotics & why are we dependent on antibiotics?]. *Health Chosun*. Retrieved November 15, 2016, from http://health.chosun.com/site/data/html_dir/2016/09/05/2016090501001.html
32. Lee, T., & Kim, C. (2015). *Health Systems in Transition: Republic of Korea Health System Review* (4th ed., Vol. 5) (S. Kwon, Ed.). Asia Pacific Observatory on Health Systems and Policies.
33. *National Hospital/Clinic Status 2015*. (2014). Korea Contents Media.
34. Partridge, J. W. (1992). Consultation time, workload, and problems audit in outpatient clinics. *Archives of Disease in Childhood*, (67), 206-210.
35. Lee, C. H., Lim, H. S., Kim, Y. N., Park, A. H., Park, E. C., & Kang, J. K. (2014). Analysis of Appropriate Outpatient Consultation Time for Clinical Departments. *Health Policy and Management*, 24(3), 254-260.

36. Kim, J. (2016, August 16). 16nyeonijae geudaero! 'hangsaengje o,namyong gukga' [No changes for 16 years! Nation of antibiotics overuse]. *Weekly DongA*. Retrieved November 15, 2016, from <http://news.donga.com/WEEKLY/Main/3/all/23/732579/1?>
37. *Pharmaceuticals Appropriateness Analysis - 2015* (Rep.). (2016). Health Insurance Review & Assessment Service.
38. Kim, S. J. (2016, September 5). Jeongook uiryogigwan hangsaengje sayong siltae hangsaengje & wae juuhaeya hana [National status on clinics' overuse of antibiotics & why are we dependent on antibiotics?]. *Health Chosun*. Retrieved November 15, 2016, from http://health.chosun.com/site/data/html_dir/2016/09/05/2016090501001.html
39. Jang, S. M., Kim, J. Y., Bae, E. Y., Oh, Y. H., Hwang, E. H., Jin, Y. R., & Ham, S. C. (2002). *Analysis and improvement measures of the separation of drug prescribing and dispensing* (Rep.). Korea Institute for Health and Social Affairs.
40. Kwon, Y. J. (2016, June 7). 45eogwondae ribeiteu susu jeyaksa imjigwont-psuisa 491myeong geomgeo [Pharmaceutical company caught for 4.5 billion won rebate, 491 involved employees and doctors arrested]. *Yonhap News*. Retrieved November 15, 2016.
41. Yoo, H. J., Song, Y. J., Lee, K. W., Lee, E. K., & Lee, J. A. (2009). Misuse of Antibiotics and Related Awareness of Consumers. *The Korean Association for Crisis and Emergency Management Review*, 1, 98-122.
42. Does stopping a course of antibiotics early lead to antibiotic resistance? (n.d.). Retrieved December 05, 2016, from <http://www.who.int/features/qa/stopping-antibiotic-treatment/en/>

RASR

ABOUT THE AUTHOR



JUSTIN PARK

SENIOR, MCMURTRY COLLEGE
ASIAN STUDIES & BIOLOGICAL SCIENCES

Justin wrote this manuscript in Fall 2016 for ASIA 495: Asian Studies Research Seminar. After conducting research on the cultural implications of MV Sewol tragedy during his sophomore year, he became more interested in the concept of speed of life and its manifestations in Korea. To further investigate the topic, he was awarded the Parish Fellowship to travel to Korea (and China & Japan) during summer of 2016. It was during this trip when he learned about the antibiotics overconsumption issue, when he was given a large dose of antibiotics for his sore throat without any bacterial testing. After graduation, he hopes become a physician and utilize this knowledge in better serving the Asian American communities. He would like to thank Dr. Sonia Ryang for her generous assistance with the paper, and Dr. Juyoung Jang for catalyzing his passion for modern Korean studies.