Airplane Lavatories: Balancing Human Rights and Public Health Challenges

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Abstract

Airplane lavatories have become a contentious issue, raising important questions surrounding human rights, privacy, and public health. This article conceptually explores the public health challenge regarding limited onboard lavatories and examines the delicate balance between passenger comfort, safety, and dignity while addressing the complexities of maintaining hygiene and preventing disease transmission during flights. Focusing on the inadequate availability of lavatories on aircraft, the article explores the challenges posed by the limited number of lavatories in relation to the passenger load. It discusses the psychological discomfort experienced by passengers when using crowded lavatories, highlighting possible instances where individuals choose to endure discomfort rather than utilizing these congested facilities. Furthermore, it delves into the potential violation of privacy resulting from the cramped spaces, emphasizing the need for preserving passengers' privacy and dignity in public settings. The vulnerability of airplane lavatories as breeding grounds for transmittable diseases is also examined. The article attempts to illustrate the risks associated with disease transmission due to the proximity of passengers, insufficient cleaning procedures, and limited ventilation. It underscores the urgent need for increased regulations and standards to address this public health concern and ensure comfortable, safe, and dignified flight experiences for all passengers. The article suggests further studies on disease transmission patterns, the impact of lavatory design, and the efficacy of cleaning protocols. It also advocates for exploring innovative technologies and promoting passenger hygiene practices.

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Introduction

Air travel has changed contemporary society by transforming the way people connect, explore, and conduct business on a global scale. Its importance can be observed across various domains, ranging from the economy and trade to tourism and cultural exchange. Air travel facilitates global connectivity by bridging vast geographical distances between countries and continents. It enables people to reach far-flung destinations quickly and efficiently, fostering international trade, diplomacy, and cultural exchange. This connectivity has contributed to the growth of global interconnectedness, fueling economic, social, and political interactions (Viña & Liu, 2023: p. 95).

Again, aviation promotes economic growth and prosperity locally and internationally. It serves as a catalyst for international trade, allowing the transportation of goods and fostering business relationships across borders. Air travel fuels tourism, generating revenue for destinations and supporting local economies through job creation, hospitality services, and infrastructure development (Air Transport Action Group, n.d.: p. 17). Also, air travel has transformed personal and professional mobility, granting individuals unparalleled freedom and mobility. It enables people to visit loved ones, pursue education or career opportunities abroad, attend international conferences and events, and explore diverse cultures and destinations. This enhanced personal and professional mobility fosters global understanding, cooperation, and cross-cultural exchange in a more inclusive and tolerant society.

Furthermore, the time efficiency of air travel is noteworthy. The aviation industry allows people to reach their destinations in a matter of hours. This time-saving aspect has revolutionized business practices, allowing professionals to conduct in-person meetings and negotiate deals in different parts of the world without significant time constraints. It has also facilitated emergency medical transportation, ensuring prompt access to critical healthcare services (Air Transport Action Group, n.d.: p. 21). Additionally, air travel has been a catalyst for scientific advancements and technological innovation. It has spurred groundbreaking discoveries in aircraft design, propulsion systems, navigation, and air traffic control. These advancements have generally improved the traveling experiences of passengers and positively impacted society.

Notwithstanding the efficiency and convenience of air travel, the insufficient availability of airplane lavatories is a pressing public health issue (Gillaspia, 2023). This concern holds significant implications not only for passenger comfort but also for health, psychology, and human rights. At a time when airlines struggle with the growing number of passengers, the ratio of available lavatories to passengers on board become a cause for concern. This article aims to explore the profound impact of this issue, delving into how the scarcity of lavatories can jeopardize the flying experiences of passengers, encroaching upon individual fundamental rights.

Firstly, the close proximity and high usage of lavatories create an environment that fosters the spread of germs and viral diseases. Inadequate cleaning procedures during flights and quick turnovers between flights may allow pathogens to persist, increasing the risk of infection (Bush, 2016). The confined space and limited ventilation in lavatories further contribute to the transmission of airborne illnesses.

Secondly, shared lavatories on airplanes often lack the necessary privacy and personal space, causing psychological discomfort for passengers. Individuals may experience feelings of embarrassment, anxiety, and a loss of dignity at the instance of insufficient onboard lavatories. Some passengers may hold their needs until the flight is over, increasing the

risk of urinal tract infections. The compromised privacy and discomfort experienced in crowded lavatories can infringe upon passengers' rights to dignity in public spaces.

Thirdly, access to clean and functioning lavatories is a basic human need, particularly during long-haul flights. and inadequate lavatory provision can disproportionately affect vulnerable individuals, such as seniors, pregnant women, or those with disabilities. The limited availability of lavatories can impede individuals' ability to fulfill basic bodily functions, thereby infringing upon their right to health and well-being. The scarcity of lavatories can result in overcrowding, leading to potential safety hazards, such as blocked aisles and restricted access during emergencies. Inadequate lavatory facilities may discourage passengers from consuming sufficient fluids, causing dehydration and potential health complications during flights.

This article conceptually explores the challenges and implications associated with the inadequate provision of lavatories on airplanes. The article adopts a qualitative approach, synthesizing and analyzing existing information to provide an overview of the challenges and implications associated with the inadequate lavatory provision on airplanes. Through a review and analysis of existing literature, regulations, and industry standards, the article draws upon studies and research conducted on disease transmission, psychological implications, and passenger experiences related to airplane lavatories. The article utilizes information from these sources to discuss the multifaceted dilemma surrounding airplane lavatories and address the balance between passenger comfort, safety, and dignity while considering the complexities of maintaining hygiene and preventing disease transmission during flights. The article examines the challenges posed by the limited availability of lavatories and explores the psychological discomfort experienced by passengers in crowded lavatories, as well as the potential violation of privacy resulting from cramped spaces. It also discusses the vulnerability of airplane lavatories as breeding grounds for transmittable diseases.

Passenger Numbers and Available Onboard Lavatories

Regulatory bodies such as the International Civil Aviation Organization (ICAO) and the Federal Aviation Administration (FAA) address the ratio of onboard lavatories to passenger numbers in airplanes. Although the number of lavatories needed per passenger or per specific seating section can vary depending on factors like aircraft type, airline policies, and cabin configuration, the ICAO's International Standards and Recommended Practices (SARPs), in particular, outline minimum requirements for narrow-body aircraft and wide-body aircraft (International Civil Aviation Organization, 2009). Narrow-body aircraft are single-aisle airplanes such as the Boeing 737, Embraer E-Jet families, or Airbus A319 and are commonly used for short to medium-haul flights. These aircraft usually have around 2 to 4 lavatories. On average, a narrow-body aircraft may carry 100 to 200 passengers (Vasigh, Fleming, & Tacker, 2018: p. 276). This translates to approximately 50 to 100 passengers per lavatory.

Wide-body aircraft are double-aisle airplanes such as the Boeing 787, MD-11, or Airbus A380 and are generally used for long-distant flights. These aircraft generally have a higher passenger capacity and feature more lavatories compared to narrow-body aircraft. The number of lavatories on wide-body aircraft can range from 6 to 10 or more, depending on the

aircraft configuration. Passenger capacity on wide-body aircraft can vary significantly, typically accommodating 200 to 500 passengers (Peoples, 2012: p. 197). This results in an average of 20 to 83 passengers per lavatory.

Despite these minimum requirements, airlines may have flexibility in configuring the cabin layout, which can impact the number of lavatories on board. Factors that influence lavatory provision include the allocation of space for other amenities like galleys, crew rest areas, or premium seating (Gudmundsson, 2013: p. 522). Considerations such as costs, operational efficiency, and aircraft weight restrictions may also play a role in determining the lavatory provision (Leff, 2018). Taking the Boeing 737 narrow-body airplane (with two to four lavatories), used for domestic flights, for example, one can generally determine the passenger-to-lavatory ratio. On the low side, an average passenger size of 100, and two onboard lavatories will mean 50 passengers per lavatory. On the high side, an average passenger size of 200, and two lavatories will mean one lavatory is available for 100 passengers. Per these estimations, one can reasonably project that around 150 passengers may use two lavatories on a narrow-body aircraft like the Boeing 737-800 (Leff, 2018).

Passenger Well-being and Limited Inflight Lavatories

The inadequate provision of lavatories on airplanes during flights has significant implications for human rights, as it directly affects passengers' dignity, privacy, and overall well-being. This issue raises concerns regarding the violation of fundamental rights and highlights the need for improved standards and practices in the aviation industry. Privacy is an essential component of human dignity, and individuals have the right to maintain personal hygiene and perform intimate activities without feeling intruded upon or embarrassed.

Insufficient onboard lavatories force passengers to use crowded and shared facilities that lack the necessary privacy and personal space, placing passengers (especially seniors, pregnant women, and individuals with disabilities) in a state of discomfort and anxiety. This violation of privacy rights can result in a loss of dignity and a sense of vulnerability during the flight. The US Department of Transportation's recent concerns about making onboard lavatories accessible to persons with reduced mobility and proposal to require enlarged lavatories in narrow-body aircraft reinforces the argument that improved onboard lavatory facilities are essential for maintaining hygiene and ensuring a safe and comfortable flying experience for all passengers (Government Accountability Office, 2020; U.S. Department of Transportation, 2022).

Access to clean and functioning lavatories is a basic human need, especially during long-haul flights. The scarcity of onboard lavatories can create safety hazards and impede passengers' ability to respond effectively during emergencies. Overcrowding resulting from a lack of lavatories can lead to blocked aisles and restricted access, hindering the swift movement of passengers during critical situations. This compromises passengers' right to safety and puts their lives at risk.

The adverse psychological effects of inadequate lavatory experiences on airplanes can be profound. Shared lavatories often lead to psychological discomfort because they lack the necessary privacy and personal space. The lack of a private and comfortable environment to attend to personal hygiene needs can cause feelings of embarrassment, anxiety, and indignity. Gillaspia's (2023) general public poll about passenger experience of inflight lavatories revealed that lavatory

usage during flights was stressful for 70% of participants. The non-existent inflight maintenance of limited and crowded lavatories may further exacerbate these psychological implications. Passengers may feel self-conscious or anxious about their appearance and cleanliness due to limited access to amenities such as running water, soap, or adequate space for grooming during the flight. The compromised privacy and discomfort experienced in crowded flight lavatories may also deny passengers the opportunity to maintain their personal hygiene with the level of privacy and comfort they deserve. Gillaspia's (2023) poll indicated that 74% of air travelers generally avoid using inflight lavatories during flights. This violation of dignity can have a significant impact on passengers' emotional state and overall satisfaction with their travel experience, leading to negative moods, a sense of frustration, and helplessness among passengers.

Airplane lavatories may be breeding grounds for the transmission of germs and viruses due to several factors, making them vulnerable environments. Sevilla (2018) has provided insights into the dynamics of transmission of diseases during flights. She underscores the high probability for infectious diseases to spread through air travel. The high traffic experienced by lavatories during flights, coupled with limited cleaning opportunities, creates an ideal setting for the persistence and spread of pathogens. Passengers interact with various surfaces and fixtures within the lavatory, increasing the risk of contamination and transmission of pathogens. Although it is challenging to provide precise statistics on disease transmission in airplane lavatories, various points shed light on their vulnerability and present evidence of potential risks (Hertzberg, Weiss, Elon, Si, Norris, and the FlyHealthy Research Team, 2018: p. 3623).

Since airplane lavatories undergo significant footfall as numerous passengers use them repeatedly throughout flights, one of the key concerns becomes the inadequate cleaning procedures and quick turnovers between flights. The US Food and Drug Administration's (FDA) concern regarding the absence of cleaning facilities on Horizon Air's Bombardier Q400 turboprop planes supports the argument that proper lavatory facilities and regular inflight cleaning services are crucial for maintaining hygiene and preventing the transmission of diseases during flights. The FDA's warning letter highlights the potential for communicable diseases to spread when there are inadequate cleaning procedures in place (Bush, 2016). The FDA's concerns align with the argument that airlines should prioritize hygiene and implement robust cleaning protocols to ensure the safety and well-being of passengers.

The limited time available for cleaning and disinfection between flights may not be sufficient to effectively eliminate all germs and viruses present (Kalić, Dožić, & Babić, 2022: p. 26). Cleaning staff may have limited time to sanitize the lavatories, leading to potential lapses in the cleaning process. This can result in pathogens persisting on surfaces such as door handles, sinks, faucets, toilet seats, and flush buttons, increasing the risk of infection for subsequent passengers. This is supported by scientific studies that have revealed the persistence of bacteria on various lavatory surfaces, such as tray tables and toilet handles, for up to 72 hours, while the influenza A virus can survive on commonly touched surfaces in lavatories for up to 24 hours (Stephens, Azimi, Thoemmes, Heidarinejad, Allen, & Gilbert, 2019; Suleyman, Alangaden, & Bardossy, 2018; Zhao, Dewald, Hennig, Bossert, Bauer, Pletz, & Jandt, 2018; Garner, 2021; Vaglenov, 2014).

Moreover, the confined space and limited ventilation within lavatories further exacerbate the transmission of airborne illnesses (Peng, Pineda Rojas, Kropff, Bahnfleth, Buonanno, Dancer, Kurnitski, Li, Loomans, Marr, Morawska, Nazaroff, Noakes, Querol, Sekhar, Tellier, Greenhalgh, Bourouiba, Boerstra, Tang, Miller, & Jimenez, J. L., 2022). The recirculated

air within aircraft cabins, while filtered and refreshed, still poses a risk for airborne transmission of diseases (Wang, You, Zhang, & Chen, 2022). A cough, sneeze, or release of respiratory droplets (containing infectious pathogen) from infected persons while flushing the toilet or touching various surfaces can remain suspended in the lavatory. Contaminated air particles, including those generated within lavatories, have the potential to spread throughout the cabin. As the concentration of pathogens in the lavatory increases, it becomes likely for other passengers, using the lavatory, to inhale these droplets and potentially become infected. The Centers for Disease Control and Prevention (CDC) warns that airborne transmission can occur in enclosed spaces like lavatories, where infected individuals produce respiratory droplets or aerosols that can be inhaled by others in close proximity (Centers for Disease Control and Prevention, 2019).

Another contributing factor to disease transmission is the close proximity passengers experience within the confined space of lavatories. This close contact with potentially contaminated surfaces, including toilet handles, faucets, doorknobs, and tray tables, facilitates the transmission of germs and viruses. Passengers, who may be in close proximity to one another while waiting in line or using adjacent lavatories, are at a heightened risk of exposure to pathogens. This is particularly true about long-haul flights, where passengers spend extended periods in the cabin, increasing the opportunities for disease transmission. Contracting an illness during a flight can not only cause discomfort and inconvenience but may also have severe consequences for vulnerable individuals or those with compromised immune systems. Research has emphasized that fomites in airplane lavatories can act as sources of transmission for respiratory viruses like influenza (Garner, 2021; Vaglenov, 2014). The potential for disease transmission is a pressing concern in light of general local and international concerns to prevent the spread of infectious diseases.

Inadequate hand hygiene practices further compound the risk of disease transmission in lavatories. Despite the availability of handwashing facilities, some passengers may not adhere to proper hand hygiene protocols. Factors like turbulence, limited space, or the rush to exit the lavatory can contribute to suboptimal hand hygiene. Studies have shown low compliance rates for proper handwashing techniques among air travelers in lavatories, with only 20% of passengers observed practicing adequate hand hygiene (World Health Organization, 2009).

While airlines and regulatory bodies continue to implement various measures to mitigate these risks, the confined space and frequent usage of airplane lavatories present inherent challenges in maintaining complete hygiene and preventing disease transmission. Although specific statistics on disease transmission in airplane lavatories may be limited, the line of discussion demonstrates the potential vulnerability of lavatories as breeding grounds for germs and viruses. By prioritizing passenger safety and well-being, airlines and regulatory bodies can work towards creating a healthier and safer travel environment for all.

Towards a Healthier and Dignified Flying Experience

Despite the challenges posed by the limited number of inflight lavatories, some measures can be implemented to ensure a healthier and more dignified passenger experience during flights. By considering alternative approaches and prioritizing passenger well-being, airlines can make significant improvements. One way to make these improvements is for airlines to

work with aircraft manufacturers to design lavatories that optimize space while maintaining functionality and cleanliness. This includes maximizing available space through innovative layouts, such as modular lavatory units or reimagined configurations that make the best use of the cabin's dimensions. By utilizing smart design choices, lavatories can provide a more comfortable and convenient experience for passengers.

For instance, touchless fixtures, self-cleaning surfaces, and antimicrobial coatings can enhance hygiene and minimize the spread of germs and viruses during flights. Considering alternative solutions is also key to addressing lavatory challenges. Modular lavatory units, for example, offer the flexibility to modify the number and location of lavatories based on passenger demand. These units can be preassembled and easily installed or removed, allowing airlines to adjust lavatory provisions according to specific flight requirements.

The implementation of increased regulations and standards regarding lavatory provision on airplanes is a crucial step in addressing the challenges posed by limited lavatory facilities. By establishing clear guidelines, regulatory bodies can ensure that airlines allocate a sufficient number of lavatories based on passenger capacity, flight duration, and aircraft type. These regulations can serve as a benchmark for airlines to meet minimum lavatory requirements, thus improving the overall passenger experience.

Again, the implementation of robust and thorough cleaning protocols is crucial to maintaining a sanitary environment in lavatories. Airlines should establish comprehensive cleaning procedures that prioritize regular disinfection of lavatory surfaces, including door handles, sinks, faucets, and toilet seats during flights. Adequate time should be allocated between flights to allow for proper cleaning and disinfection.

Another significant measure that can be implemented to ensure passenger hygiene and dignity is passenger education which focuses on proper inflight hand hygiene practices and lavatory etiquette sensitization. Airlines can display informative signage inside lavatories, reminding passengers of the importance of handwashing and providing instructions for proper techniques. By raising awareness and providing guidance, airlines can encourage passengers to adhere to good hygiene practices, reducing the risk of disease transmission during flights.

Additionally, efficient queue management can help alleviate congestion and improve the flow of passengers in and out of lavatories during flights. Clear signage indicating the availability of lavatories and directing passengers to open facilities can help distribute the usage evenly. Alternatively, flight attendants can assist in managing queues and ensuring that passengers follow proper lavatory etiquette, thereby reducing waiting times and minimizing discomfort for passengers. In this regard, airlines can enhance the inflight experience by providing passengers with readily accessible hygiene products in lavatories. For example, the provision of hand sanitizers, sanitizing wipes, and disposable seat covers can significantly improve inflight hygiene. By offering these amenities, airlines could demonstrate their commitment to total passenger well-being.

Moreover, airlines could solicit passenger feedback on lavatory conditions to gather suggestions on how to improve them. By actively seeking input from passengers, airlines can gain valuable insights into the effectiveness of their lavatory facilities and identify areas for enhancement. Regular communication with passengers regarding measures taken to

address their concerns fosters a sense of transparency and demonstrates the airline's commitment to improving the passenger experience.

By implementing these measures, airlines can enhance the inflight experience, prioritizing passenger health and dignity despite the limitations of inflight lavatories. By designing efficient lavatories, adhering to regulations, maintaining stringent cleaning protocols, promoting passenger education, managing queues effectively, providing hygiene products, and seeking feedback, airlines can create an environment that ensures a healthier and more dignified experience for all passengers. These efforts contribute to a more positive and comfortable journey, even in the face of limited lavatory facilities.

Conclusion

The inadequate provision of lavatories on airplanes presents a multifaceted issue that reaches beyond mere inconveniences. It has a profound impact on passenger health, psychology, and human rights, making it imperative for the aviation industry, regulatory bodies, and airlines to address this matter proactively. By recognizing the significance of lavatory provision and its impact on passenger experience, stakeholders can work collaboratively to implement effective solutions that maintain passenger well-being and dignity during air travel.

To achieve this, the aviation industry must collaborate with regulatory bodies to establish and enforce increased regulations and standards that govern lavatory provisions on airplanes. These guidelines should encompass considerations such as passenger capacity, flight duration, and accessibility to ensure that lavatory facilities meet the needs of all passengers.

Additionally, there is a need for innovation in lavatory design and technology. Exploring new approaches, such as modular lavatory units or advancements in sanitation methods, can optimize space utilization, enhance hygiene practices, and improve overall passenger comfort. By leveraging emerging technologies, the aviation industry can transform lavatory facilities into well-designed spaces that prioritize both functionality and passenger experience.

Furthermore, addressing the psychological impact of inadequate lavatories is crucial. Awareness of passenger perceptions, behaviors, and the long-term effects of crowded lavatory experiences will inform strategies to create environments that promote privacy, dignity, and well-being during flights. Education and awareness campaigns can also play a significant role in promoting proper lavatory etiquette and hygiene practices among passengers.

Lastly, recognizing the human rights implications of inadequate lavatory provision is essential. Ensuring equitable access to clean and well-maintained lavatories, particularly for vulnerable populations, is a fundamental aspect of upholding human dignity during flights. By embracing inclusivity and accessibility in lavatory design and provision, the aviation industry can foster an environment where the rights of all passengers are respected.

It is crucial for stakeholders to actively engage in ongoing dialogue, collaboration, and research to address the challenges associated with inadequate lavatories. Such engagements can foster an industry-wide commitment to prioritizing the well-

being and rights of passengers, maintaining the integrity of the aviation industry at the same time.

Academia could conduct further research to address the multifaceted challenges presented by limited inflight lavatories. Future research should deepen an understanding of the implications on passenger health, psychology, and human rights. In-depth research in these areas can uncover valuable insights that will inform effective strategies for improving lavatory provision and ensuring a positive passenger experience during flights. Specific research areas that could be emphasized include disease transmission patterns during flights, the design and layout of onboard lavatory facilities, technology and cleaning protocols, and passenger behavior and compliance during flights.

By directing research efforts toward these areas, the challenges associated with inadequate onboard lavatory provision could be comprehensively understood and addressed with evidence-based solutions. The combined efforts of academia, industry, and regulatory bodies are critical to positively change and ensure passenger safety, comfort, and dignity during flights. The insights gained from future research will inform the implementation of proactive measures that prioritize passenger well-being and uphold their rights in the realm of aviation.

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