ISSN: 2473-4901
v12 n6808

Analysis of the 2021 Johnson & Johnson COVID-19 Communication Crisis through the Lens of Image Repair Theory

Jamie Pinchot
pinchot@rmu.edu
Robert Morris University
Pittsburgh, PA

Mohammad Imran Hossain
mohammad.hossain1@sunydutchess.edu
SUNY-Dutchess Community College
Poughkeepsie, NY 12601

Abstract

This case study explores the 2021 Johnson & Johnson COVID-19 communication crisis and analyzes the company's corporate crisis communication strategies through the lens of Image Repair Theory (IRT). The Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) suspended the Janssen COVID-19 vaccine after reports of rare blood clots, significantly affecting the company's reputation and vaccine adoption. The study examines how Johnson & Johnson used minimization and corrective action as image repair strategies to rebuild public trust and assesses the extent to which the available evidence supports claims about their effectiveness. The study also examined Johnson & Johnson's efforts to combat misinformation on social media. The company partnered with social media platforms, shared accurate information, collaborated with public health authorities, and conducted clinical trials to provide evidence of the vaccine's safety and efficacy.

Keywords: Crisis Communication, Image Repair Theory, COVID-19, Johnson & Johnson, Public Health Communication, Social Media

ISSN: 2473-4901
v12 n6808

Analysis of the 2021 Johnson & Johnson COVID-19 Communication Crisis through the Lens of Image Repair Theory

Jamie Pinchot and Mohammad Imran Hossain

1. INTRODUCTION

During the pandemic, much debate has centered on how social media affects conversations about public health. However, isolating how much of its effect is due to a lack of data and methodological obstacles has been difficult to determine. On April 13, 2021, the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) suspended Johnson & Johnson's Janssen COVID-19 vaccine for ten days after receiving reports of potential health complications that could be related to the vaccine. This gave researchers a unique opportunity to observe how news of a major event spreads through social media and shapes the tone of online conversation. The suspension news sparked more interest and debate about vaccine information and led to more negative comments about vaccination as the news spread through social media (Wirtschafter, 2021). Social media's reach made the rapid, worldwide spread of the vaccine-suspension news possible. After the pause of the Janssen COVID-19 vaccine, Moderna vaccine shares rose while J&J shares fell more than 2% (Sonenshine, 2021). These breaking news stories seriously impacted the reputation of Johnson & Johnson (J&J). It was not the first time J&J faced this type of crisis; it also occurred during the Tylenol crisis of 1982. However, the current communication environment differs substantially from that earlier period given the changed communication landscape involving the internet and social media.

Corporate crisis communication plays a critical role in managing and mitigating the negative impacts of crises on organizations. In the context of the COVID-19 pandemic, effective crisis communication became even more crucial, especially for pharmaceutical companies involved in vaccine development and distribution. This case study examines the case of Johnson & Johnson's COVID-19 vaccine crisis, focusing on its corporate crisis communication strategies and their effectiveness in maintaining the company's reputation and public trust. Further, this study analyzes Johnson & Johnson's crisis communication strategies using a well-established reputation management theory.

2. METHODOLOGY

This study employs a qualitative, single-case case study design (Yin, 2018), a method well suited to examining a bounded, contemporary crisis-communication event in depth. Johnson & Johnson's 2021 Janssen COVID-19 vaccine suspension was selected as a critical case because it combined a high-visibility public health decision, an established corporate reputation, and rapid amplification through social media, making it a useful lens for evaluating image repair strategies under real-time public scrutiny.

Data sources were purposively sampled from J&J's official public communications and contemporaneous media coverage of the crisis: the company's press releases dated April 13, April 14, and April 23, 2021 (Johnson & Johnson, 2021a, 2021b, 2021c), a subsequent 2022 real-world evidence release (Johnson & Johnson, 2022), and secondary reporting from Brookings, Kaiser Health News, NPR, Barron's, and Fierce Pharma that documented the market, regulatory, and public-opinion context surrounding the suspension. These sources were selected because they represent the primary corporate messaging artifacts through which J&J enacted its image-repair strategies, supplemented by independent reporting to corroborate timeline and impact claims. In total, four primary corporate communications were analyzed in full (three 2021 press releases and one 2022 release), supplemented by six secondary media sources used to corroborate timeline, market, and public-opinion context. The unit of analysis was the rhetorical move — a discrete statement or claim within each artifact — rather than the full document, allowing multiple strategies to be identified within a single press release where applicable.

The two authors independently coded each communication artifact against Benoit's (2018) five image repair strategies and their associated fourteen sub-strategies (denial, evasion of responsibility, reducing offensiveness, corrective action, and mortification), using the strategy definitions in Table 1 as the

coding frame. Coded excerpts were then compared and reconciled through discussion until consensus was reached on which strategies were present in the text; strategies not evidenced in the sampled communications (e.g., mortification) were coded as absent rather than inferred. Disagreements were infrequent and were resolved by re-examining the specific language in question against Benoit's (2018) strategy definitions rather than by majority rule, given the two-coder design. This deductive, theory-driven coding approach follows prior applications of IRT in single-case corporate crisis research (Benoit, 2018; Jiang & Ren, 2022).

3. DESCRIPTION OF THE CASE

After learning that six women in the United States who received J&J's COVID-19 vaccine developed a rare but serious blood clot, the CDC and FDA advised on April 13, 2021, that health providers and states should temporarily stop using the vaccine. One woman died, and another was critically injured. According to CDC and FDA officials, all six incidents occurred among women ages 18 to 48, and symptoms appeared six to 13 days after vaccination. This was the latest in a long line of messaging difficulties for J&J. The suspension came less than a week after three immunization clinics in Georgia, North Carolina, and Colorado temporarily stopped using the vaccine after several people fell or became dizzy shortly after receiving the vaccine (Galewitz, 2021). According to survey results from the week before the pause, the share of unvaccinated Americans willing to get vaccinated was evenly split. After the pause, policy analysts worried that the growing evidence of the dangers of remaining unvaccinated might not be sufficient to convince many people (Feuer, 2021). The CDC and FDA reversed course and lifted the suspension on April 23, but polling data revealed that the brief pause may have harmed public trust in the J&J vaccine.

To regain the company's image and respond to the crisis, J&J immediately released a statement on the issue noting:

> *The safety and well-being of the people who use our products is our number one priority. We are aware of an extremely rare disorder involving people with blood clots in combination with low platelets in a small number of individuals who have received our COVID-19 vaccine. The United States Centers for Disease Control (CDC) and Food and Drug Administration (FDA) are reviewing data involving six reported U.S. cases out of more than 6.8 million doses administered. Out of an abundance of caution, the CDC and FDA have recommended a pause in the use of our vaccine. In addition, we have been reviewing these cases with European health authorities. We have made the decision to proactively delay the rollout of our vaccine in Europe and pause vaccinations in all Janssen COVID-19 vaccine clinical trials while we update guidance for investigators and participants. We have been working closely with medical experts and health authorities, and we strongly support the open communication of this information to healthcare professionals and the public (Johnson & Johnson, 2021a, para. 1-3).*

This statement opened by stressing that consumer safety and well-being were the company's top priority (Johnson & Johnson, 2021a), which conveyed trust to consumers. The company then partially accepted the allegation with some valid justifications. J&J committed to investigating the claims and abiding by the instructions of the CDC and FDA. It also promised to establish new consumer guidance and delay shipment of the vaccine to Europe. On April 14, 2021, the company issued another press release providing an update on the CDC meeting, in which Paul Stoffels, M.D., Vice Chairman of the Executive Committee and Chief Scientific Officer at Johnson & Johnson, reiterated the company's commitment to safety, awareness of symptoms, and continued collaboration with global health authorities including the CDC, FDA, European Medicines Agency, and the World Health Organization (Johnson & Johnson, 2021b, para. 2).

Within a short period, anti-vaccine posts flooded social media regarding the J&J vaccine. Robert Kennedy Jr., who has 230,000 Facebook followers and is well known as a leading propagator of vaccine skepticism in the U.S., shared the story. Rizza Islam, a vocal opponent of vaccination, especially within the Black community, tweeted to his 54,000 followers about possible conspiracies related to the Johnson & Johnson news (Parks, 2021).

The CDC and FDA lifted the pause on the J&J vaccine after ten days, on April 23, 2021, concluding that the vaccine's benefits outweighed its risks for the general population, while recommending updated guidance to help identify and treat the rare clotting disorder in affected individuals. On the same day, J&J issued another press release with special guidelines for users, particularly those with a history of blood clots, and stated its belief that a single-shot, easily transportable COVID-19 vaccine offering protection against multiple variants could help protect public health worldwide, while committing to collaborate with health authorities to help ensure early identification and effective treatment of this rare event (Johnson & Johnson, 2021c, para. 3).

Although the pause lasted just ten days, it significantly altered the vaccine's popularity and adoption curve, shaping public perception and uptake. Since the vaccine's introduction in the U.S. in early 2021, nearly 19 million doses have been administered, compared to approximately 430 million doses of the Pfizer-BioNTech vaccine and about 267 million doses of the Moderna vaccine, according to the CDC.

J&J's vaccine also underperformed sales expectations. The company's original 2022 sales forecast of $3 billion to $3.5 billion was revised downward following a weak first quarter; the vaccine generated $1.49 billion in the first nine months of 2022 (Sagonowsky, 2023).

4. REPUTATION MANAGEMENT

One of the most prominent theories of crisis communication, Image Repair Theory (IRT), is applicable to the Johnson & Johnson COVID-19 vaccine case. William L. Benoit, the originator of Image Repair Theory, introduced the framework in the early 1990s. Benoit (1995) developed IRT as a framework for analyzing image repair strategies employed by organizations during crises, conceptualizing image repair as a response to accusations or adverse events that threaten an organization's reputation. The theory draws on concepts from rhetorical and communication theories, such as apologia, audience analysis, and persuasion, and identifies five core strategies: denial, evasion of responsibility, reducing offensiveness, corrective action, and mortification. Numerous studies of crisis communication have applied Image Repair Theory (Sheldon & Sallot, 2008; Jin & Liu, 2013; Luo et al., 2014; Jiang & Ren, 2022). Sheldon and Sallot (2008) investigated the effects of image repair strategies and performance history on audience evaluations of a politician who committed a racial remark faux pas. Jiang and Ren (2022) found that Chinese universities commonly use a combination of bolstering, provocation, and corrective action, although they have yet to adopt the apology strategy that is widely used in Western discourse systems.

While IRT has been applied to a range of corporate and political crises (Sheldon & Sallot, 2008; Jin & Liu, 2013; Luo et al., 2014; Jiang & Ren, 2022), most existing case applications examine crises triggered by a single controversial statement or action attributable to the organization itself. The J&J case differs in structure: it was triggered by an external regulatory decision (the CDC/FDA pause), unfolded and reversed within a ten-day window, and was amplified in real time through social media rather than traditional press coverage alone. This case therefore extends prior IRT work by examining how image repair strategies function under conditions of regulatory-driven, rapidly reversed crises with social-media-accelerated spread — a combination that has received limited attention in the existing crisis-communication literature.

5. APPLICATION OF IMAGE REPAIR THEORY

Several frameworks have been applied to the study of crisis communication by academics. Hearit (2006) proposed "crisis communication through apologies," and Coombs (2012, 2013) developed "Situational Crisis Communication Theory" (SCCT) in response to a problem in corporate communication. However, Benoit (1995a, 1997, 2015) drew on the study of rhetoric to develop "Image Repair Theory" (IRT) (Benoit, 2018), which is the more relevant framework for this study. IRT rests on two central presumptions: (a) a good reputation is important for communicating well and for communicating in general, and (b) talking about oneself in a way that improves one's reputation is a way to protect against real or imagined attacks. A threat consists of two parts: an offensive act, and the attribution of that act to the accused. IRT identifies five overarching strategies and fourteen specific sub-strategies (Benoit, 2018): denial, evading responsibility, reducing offensiveness, corrective action, and mortification.

In Benoit's (2018) denial strategy, there are two sub-strategies: simple denial and shift the blame. An example of simple denial would be to note that the party in question did not perform the act, or to emphasize that the act performed was not harmful. An example of shift the blame would be to assert that another party committed the offense.

The evading responsibility strategy has four sub-categories: provocation, defeasibility, accident, and good intentions. An example of provocation would be to note that the offensive act was only a response to an earlier offense. An example of defeasibility would be to insist that the party in question lacked information or ability, leading to the offense. An accident would be defined as a mishap. Finally, an example of good intentions would be that the party meant well despite the act (Benoit, 2018).

Benoit's (2018) reduce offensiveness strategy includes five sub-categories: bolstering, minimization, differentiation, transcendence, and attack the accuser. An example of bolstering would be to stress the defender's positive traits. Minimization involves making the offensive act seem less serious than it appears. Differentiation stresses that the act is less offensive than other similar acts. Transcendence justifies the act by appealing to more important values held by the defender. Finally, attack the accuser reduces the credibility of the accuser by suggesting that the victim deserved the offense or by shifting audience attention away from the act.

The fourth strategy in Benoit's (2018) Image Repair Theory is corrective action, which focuses attention on the defender's intent or actions to fix the problem or prevent recurrence. The fifth and final strategy is mortification, which focuses on apologizing for the act.

In this case study, the authors reviewed the actions taken by J&J to maintain the company's image and trustworthiness toward its COVID-19 vaccine, including the company's press releases and media reports. J&J's press releases and media reports were analyzed using the lens of Benoit's (2018) Image Repair Theory. In applying IRT to this case, the authors observed that J&J's communications primarily employed two strategies: reducing offensiveness (minimization) and corrective action. No clear instance of denial was identified in the sampled communications; J&J did not dispute that the reported blood-clot cases occurred or that they were plausibly linked to the vaccine, which distinguishes this case from IRT applications where organizations contest the underlying facts of the offense. The next section provides an analysis of the application of these strategies to the case.

5.1 Minimization

First, J&J used a minimization strategy, shown in the statement that "the United States Centers for Disease Control (CDC) and Food and Drug Administration (FDA) are reviewing data involving six reported U.S. cases out of more than 6.8 million doses administered" (Johnson & Johnson, 2021a, para. 1). The small number of cases relative to total doses administered is emphasized, minimizing the perceived impact. Further, J&J facilitated rigorous research on vaccine efficacy among users and published it in a peer-reviewed journal to demonstrate overall effectiveness and further minimize the negative impact of the rare, problematic cases. The company reported vaccine effectiveness against COVID-19-related hospitalization of approximately 80 percent from a single shot, with protection holding steady over the length of time studied, including against the Omicron variant (Johnson & Johnson, 2022, para. 2).

5.2 Corrective Action

Second, J&J took corrective action, shown in the press release noting that "Johnson & Johnson has updated the EUA Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers), and Recipients and Caregivers for the Company's COVID-19 vaccine, to include information about the diagnosis and treatment of thrombosis with thrombocytopenia" (Johnson & Johnson, 2021c, para. 4). The strategies employed by J&J to repair its image in this case are detailed with accompanying examples in Table 1.

Table 1. Typology of Image Repair Strategy Applied to the J&J Vaccine Case

Strategy	Definition	Examples
Reduce Offensiveness – Minimization	Make the offense seem less serious than it appears.	J&J emphasizes the rarity of the case: "We are aware of an extremely rare disorder involving people with blood clots in combination with low platelets in a small number of individuals who have received our COVID-19 vaccine" (Johnson & Johnson, 2021a, para. 1). J&J emphasizes the small number of cases relative to the total: "The United States Centers for Disease Control (CDC) and Food and Drug Administration (FDA) are reviewing data involving six reported U.S. cases out of more than 6.8 million doses administered" (Johnson & Johnson, 2021a, para. 1).
Corrective Action	Fix the problem or prevent recurrence.	J&J commits to educating healthcare professionals: "We will collaborate with health authorities around the world to educate healthcare professionals and the public to ensure this very rare event can be identified early and treated effectively" (Johnson & Johnson, 2021c, para. 3). J&J provides an advisory on vaccine eligibility based on physical condition: "Johnson & Johnson has updated the EUA Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers), and Recipients and Caregivers for the Company's COVID-19 vaccine, to include information about the diagnosis and treatment of thrombosis with thrombocytopenia" (Johnson & Johnson, 2021c, para. 4).

5.3 Combating Misinformation on Social Media

Beyond the core image repair strategies, Johnson & Johnson undertook several efforts to counter misinformation on social media about its COVID-19 vaccine. Some of these activities were direct, event-specific responses to the April 2021 pause, while others were part of J&J's broader, ongoing vaccine-education programming that predated and continued beyond the crisis window; both are described below, with that distinction noted.

1. Partnering with social media companies: J&J partnered with platforms such as Facebook, Twitter, and LinkedIn to address misinformation, working with these platforms to identify and remove false claims. One example is the "Road to a Vaccine" series, a weekly educational broadcast highlighting vaccine development. The premiere drew 1,000 viewers within the first minute and over 2,000 within five minutes, with more than 90% of viewers watching the full 30-minute program; average weekly viewership across episodes reached approximately 983,000 (Ruotolo, n.d.). This series launched prior to the April 2021 pause and continued afterward as part of J&J's ongoing vaccine-education programming, rather than as a response initiated specifically because of the crisis.

2. Sharing accurate information: J&J shared accurate vaccine information through its website, social media channels, and other media outlets, and worked with healthcare professionals to provide them with accurate information.

3. Collaborating with public health authorities: J&J collaborated with the CDC and the World Health Organization (WHO) to share accurate vaccine information.

4. Conducting clinical trials: J&J conducted clinical trials testing vaccine safety and efficacy, publishing results in peer-reviewed journals (Sadoff et al., 2021).

Based on the sources reviewed for this study, these activities reflect J&J's broader, ongoing vaccine-education programming more than actions initiated specifically in direct response to the April 2021 pause; the corporate communications and media coverage examined here do not document platform-specific interventions, such as the removal of individual posts, tied to this particular crisis window. This distinction should be kept in mind when interpreting social media as a contribution of this case study.

These activities can be understood as an extension of J&J's corrective-action strategy under IRT: rather than confining corrective action to formal press statements, the company distributed it across platforms and channels, using partnerships, direct education, and clinical evidence to reinforce the same core message conveyed in its press releases. Framed this way, the misinformation-response activities are not a separate communication effort but a channel-level expression of the same image-repair strategy identified in Section 5.2.

To further improve the company's image, J&J took several initiatives, albeit somewhat belatedly. Under IRT, J&J could have more immediately adopted a bolstering and transcendence approach (Benoit, 2018) by demonstrating vaccine efficacy through a virtual press conference, publishing academic research, and organizing a third-party-facilitated roundtable discussion. In the social media era, the company should have more carefully considered the timing of its actions. Open-Source Intelligence (OSINT) techniques could have been used to monitor the social media campaign against the J&J vaccine and to promptly mitigate negative messaging. Going forward, the company should thoroughly analyze risk and develop strategic plans to mitigate adverse reputational events, accounting for the dynamics of the social media age.

6. LIMITATIONS AND FUTURE RESEARCH

This study has several limitations. First, as a single-case qualitative analysis, findings are not statistically generalizable beyond the J&J context; large, non-pharmaceutical, or non-U.S. organizations may deploy image repair strategies differently. Second, the analysis relies on official corporate communications and secondary media reporting rather than primary audience-response data; claims about the pause's effect on public trust and vaccine adoption are drawn from third-party polling and sales figures rather than an independent sentiment or survey instrument, so the causal link between J&J's specific messaging choices and public perception cannot be directly established. Third, although two authors independently coded the communications against Benoit's (2018) framework and reconciled disagreements, qualitative coding of rhetorical strategy retains an element of interpretive judgment. Fourth, the study evaluates only English-language, U.S.-focused communications and does not capture how the crisis was framed in international or non-English social media, which limits the analysis given J&J's global vaccine rollout.

Future research should address these gaps in two directions. First, applying computational sentiment and topic-modeling techniques to large-scale social media datasets from the pause period would allow researchers to empirically test whether specific IRT strategies (e.g., minimization) correlate with measurable shifts in public sentiment or vaccine hesitancy, rather than relying on narrative inference. Second, the crisis-communication landscape this case describes has itself shifted. Generative AI now enables health misinformation to be produced at greater volume and perceived credibility, and current detection systems perform poorly against AI-generated content (Saeidnia et al., 2026); forewarning audiences about AI hallucination can help (Hwang & Jeong, 2025), and generative tools are also being explored as fact-checking aids (Li et al., 2025). These developments also carry equity implications: audiences with limited digital literacy or restricted technology access may be less able to evaluate AI-generated health content or benefit from AI-enabled communication tools, potentially widening existing health disparities (Uddin et al., 2025). Extending the IRT framework used here to organizations navigating AI-generated misinformation — and testing whether strategies such as corrective action remain effective against synthetic content and uneven audience digital literacy — represents a timely direction for future research.

7. CONCLUSIONS

Johnson & Johnson faced a crisis when the CDC and FDA suspended its Janssen COVID-19 vaccine due to reports of rare blood clots. The suspension significantly affected the company's reputation and vaccine

adoption. Johnson & Johnson employed strategies grounded in Image Repair Theory in its attempt to repair its image and rebuild public trust, issuing statements that emphasized the safety and well-being of vaccine recipients while acknowledging the rare disorder associated with the vaccine. The company minimized the severity of the offense by emphasizing the small number of cases relative to the total doses administered and took corrective action by collaborating with health authorities, updating vaccine information, and conducting further efficacy research.

This study also highlights Johnson & Johnson's efforts to combat social media misinformation, including partnering with platforms to remove false claims, sharing accurate information through its own channels, collaborating with public health authorities, and conducting clinical trials to substantiate vaccine safety and effectiveness.

Overall, the study concludes that Johnson & Johnson's crisis management approach was consistent with the principles of Image Repair Theory, employing minimization and corrective action. Because this study relies on corporate communications and secondary reporting rather than primary audience-response data, it identifies the strategies J&J used and situates them against contextual indicators such as sales and adoption trends, but it does not establish a direct causal link between these strategies and changes in public trust; that relationship remains a question for future empirical research.

8. DISCLOSURE OF INTEREST

There are no relevant financial or non-financial competing interests to report for this study.

9. REFERENCES

Benoit, W. (2018). Crisis and image repair at united airlines: Fly the unfriendly skies. Journal of International Crisis and Risk Communication Research, 1(1), 11–26. https://doi.org/10.30658/jicrcr.1.1.2

Benoit, W. L. (1995). Sears' repair of its auto service image: Image restoration discourse in the corporate sector. Communication Studies, 46(1-2), 89–105. https://doi.org/10.1080/10510979509368441

Benoit, W. L. (2006). Image repair in president Bush's April 2004 news conference. Public Relations Review, 32(2), 137–143. https://doi.org/10.1016/j.pubrev.2006.02.025

Canny, I. (2016). An application of situational crisis communication theory on Germanwings flight 9525 crisis communication. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2728712

Coombs, T. (2013). Situational theory of crisis: Situational crisis communication theory and corporate reputation. In The Handbook of Communication and Corporate Reputation (pp. 262–278). https://doi.org/10.1002/9781118335529.ch23

Coombs, W. T. (2004). Impact of past crises on current crisis communication: Insights from situational crisis communication theory. Journal of Business Communication, 41(3), 265–289. https://doi.org/10.1177/0021943604265607

Feuer, M. (2021, April 28). The Johnson and Johnson vaccine pause and the challenge of risk assessment. Brookings. https://www.brookings.edu/blog/fixgov/2021/04/28/the-johnson-and-johnson-vaccine-pause-and-the-challenge-of-risk-assessment/

Galewitz, P. (2021, April 14). 4 things to know about the J&J covid vaccine pause. Kaiser Health News. https://khn.org/news/article/4-things-to-know-about-the-jj-covid-vaccine-pause/

Gu, C., Zhuo, X., & Jiang, K. (2026). What drives users' intention to discern AI-generated health misinformation? Evidence from a scenario-based experiment and SEM-ANN analysis. Journal of Health Communication. Advance online publication.

Hwang, Y., & Jeong, S. H. (2025). Generative artificial intelligence and misinformation acceptance: An experimental test of the effect of forewarning about artificial intelligence hallucination. Cyberpsychology, Behavior, and Social Networking, 28(1), 59–66. https://doi.org/10.1089/cyber.2024.0407

Jiang, J., & Ren, J. (2022). Chinese universities' image repair after network public opinion events: Strategy choice and effect evaluation. Discrete Dynamics in Nature and Society, 2022, 1–14. https://doi.org/10.1155/2022/7741311

Jin, Y., & Liu, B. F. (2013). Effects of image repair strategies on publics' perceptions and attitudes: A study of Apple's iPhone 4 crisis. Public Relations Review, 39(5), 493–495.

Johnson & Johnson. (2021a, April 13). Johnson & Johnson statement on COVID-19 vaccine (updated) [Press release]. https://www.jnj.com/johnson-johnson-statement-on-covid-19-vaccine-updated

Johnson & Johnson. (2021b, April 14). Johnson & Johnson statement on CDC advisory committee meeting on company COVID-19 vaccine [Press release]. Content Lab U.S. https://www.jnj.com/johnson-johnson-statement-on-cdc-advisory-committee-meeting-on-company-covid-19-vaccine

Johnson & Johnson. (2021c, April 23). Johnson & Johnson single-shot COVID-19 vaccinations to resume in the U.S. for all adults aged 18 and older following CDC and FDA decision [Press release]. Content Lab U.S. https://www.jnj.com/johnson-johnson-single-shot-covid-19-vaccinations-to-resume-in-the-u-s-for-all-adults-aged-18-and-older-following-cdc-and-fda-decision

Johnson & Johnson. (2022). Real world evidence shows Johnson & Johnson COVID-19 vaccine demonstrates durable protection against breakthrough infection, hospitalization, and intensive care unit admission in the United States. Content Lab U.S. https://www.jnj.com/real-world-evidence-shows-johnson-johnson-covid-19-vaccine-demonstrates-durable-protection-against-breakthrough-infection-hospitalization-and-intensive-care-unit-admission-in-the-united-states

Joseph, J., Jose, B., & Jose, J. (2025). The generative illusion: How ChatGPT-like AI tools could reinforce misinformation and mistrust in public health communication. Frontiers in Public Health, 13, 1683498. https://doi.org/10.3389/fpubh.2025.1683498

Li, H., Huang, J., Ji, M., Yang, Y., & An, R. (2025). Use of retrieval-augmented large language model for COVID-19 fact-checking: Development and usability study. Journal of Medical Internet Research, 27, e66098. https://doi.org/10.2196/66098

Luo, Y., Kim, S., & Han, S. (2014). Crisis communication strategies and image repair in response to the ebola crisis: A study of the United States and Spain. Public Relations Review, 40(3), 522–524.

Ma, L., & Zhan, M. (2016). Effects of attributed responsibility and response strategies on organizational reputation: A meta-analysis of situational crisis communication theory research. Journal of Public Relations Research, 28(2), 102–119. https://doi.org/10.1080/1062726x.2016.1166367

Macnamara, J. (2021). New insights into crisis communication from an "inside" emic perspective during COVID-19. Public Relations Inquiry, 10(2), 237–262. https://doi.org/10.1177/2046147x21999972

Mason, A. M. (2014). The impact of media frames and treatment responsibility within the situational crisis communication theory framework. Corporate Reputation Review, 17(1), 78–90. https://doi.org/10.1057/crr.2013.26

Othman, A. F., & Yusoff, S. Z. (2020). Crisis communication management strategies in MH370 crisis with special references to situational crisis communication theory. International Journal of Academic Research in Business and Social Sciences, 10(4). https://doi.org/10.6007/ijarbss/v10-i4/7118

Parks, M. (2021, April 15). The most popular J&J vaccine story on facebook? A conspiracy theorist posted it. NPR. https://www.npr.org/2021/04/15/987182241/the-most-popular-j-j-vaccine-story-on-facebook-a-conspiracy-theorist-posted-it

Ruotolo, L. (n.d.). Johnson & Johnson streams first-ever LIVE weekly COVID-19 news series "the road to a vaccine" driving massive engagement on LinkedIn Live. Business.linkedin.com. https://business.linkedin.com/marketing-solutions/case-studies/johnson-and-johnson

Sadoff, J., Gray, G., Vandebosch, A., Cárdenas, V., Shukarev, G., Grinsztejn, B., Goepfert, P. A., Truyers, C., Fennema, H., Spiessens, B., Offergeld, K., Scheper, G., Taylor, K. L., Robb, M. L., Treanor, J., Barouch, D. H., Stoddard, J., Ryser, M. F., Marovich, M. A., & Neuzil, K. M. (2021). Safety and efficacy of single-dose Ad26.COV2.S vaccine against covid-19. New England Journal of Medicine, 384(23). https://doi.org/10.1056/nejmoa2101544

Sagonowsky, E. (2023). Johnson & Johnson cuts production of underperforming COVID vaccine: WSJ. Fierce Pharma. https://www.fiercepharma.com/manufacturing/johnson-johnson-cuts-production-underperforming-covid-vaccine-wsj

Saeidnia, H. R., Jahani, S., Ghiasi, N., & Keshavarz, H. (2026). Generative AI and health misinformation: Production, propagation, and mitigation—a systematic review. BMC Public Health, 26(1), 693. https://doi.org/10.1186/s12889-025-26148-9

Sheldon, C. A., & Sallot, L. M. (2008). Image repair in politics: Testing effects of communication strategy and performance history in a faux pas. Journal of Public Relations Research, 21(1), 25–50. https://doi.org/10.1080/10627260802520496

Sisco, H. F. (2012). Nonprofit in crisis: An examination of the applicability of situational crisis communication theory. Journal of Public Relations Research, 24(1), 1–17. https://doi.org/10.1080/1062726x.2011.582207

Sonenshine, J. (2021, April 13). Moderna rises, Johnson & Johnson falls after its vaccine pause dents stocks. Barron's. https://www.barrons.com/articles/moderna-rises-johnson-johnson-falls-after-its-vaccine-pause-dents-stocks-51618321295

Uddin, J., Feng, C., & Xu, J. (2025). Health communication on the internet: Promoting public health and exploring disparities in the generative AI era. Journal of Medical Internet Research, 27, e66032. https://doi.org/10.2196/66032

Wirtschafter, V. (2021, April 29). Tracking the impact of the J&J pause across social media. Brookings. https://www.brookings.edu/techstream/tracking-the-impact-of-the-jj-pause-across-social-media/

Yin, R. K. (2018). Case study research and applications: Design and methods (6th ed.). Sage Publications.