1828
AKADÉMIAI KIADÓ

Journal of Behavioral Addictions

DOI:
10.1556/2006.2025.00431

DEBATE: DOES NOSE SPRAY ADDICTION EXIST?

Nasal spray addiction: Further thoughts and observations –A qualitative analysis of addiction components in "rhinitis medicamentosa" by Lakatos et al. (2025)

Commentary to the debate: "Does nose spray addiction exist?"

MARK D. GRIFFITHS*

Psychology Department Nottingham Trent University Nottingham, United Kingdom

Received: September 26, 2025 • Revised manuscript received: March 11, 2026 • Accepted: March 19, 2026

ABSTRACT

The recently published study by Lakatos et al. (2025) interviewed 20 individuals with rhinitis medicamentosa, and examined if nasal spray addiction existed by applying the components of addiction (i.e., looking for examples of salience, tolerance, mood modification, withdrawal, conflict, and relapse) in their interview transcripts. The authors claimed to have found evidence for all six components. In this commentary on the paper by Lakatos et al. (2025), I argue that the examples cited as evidence for the presence of addiction components is questionable in a number of instances, particularly in relation to conflict, as well as to mood modification, relapse, and salience. There was also little evidence that any of the consequences of nasal spray overuse were persistent (i.e., lasting over 12 months).

KEYWORDS

nasal spray addiction, nasal spray overuse, nasal spray dependence, components model of addiction, rhinitis medicamentosa

INTRODUCTION

Over a decade ago, I published a populist article on whether nasal sprays could be addictive (Griffiths, 2013). In that article I briefly reviewed academic papers and non-academic articles that had examined 'nasal spray addiction' (of which there was relatively little) including Ramey, Bailen, and Lockey (2006) who noted that:

> *"Psychological dependence and an abstinence syndrome consisting of headaches, restlessness, and anxiety following discontinuation of nasal decongestants have been reported, leading some authors to use the word 'addiction' when describing this syndrome [Fleece, Mizes, Jolly, & Baldwin, 1984]. A case report described a subject with [rhinitis medicamentosa] who carried 4 gallons of phenylephrine aboard a wartime ship [Pearson & Little, 1969], allegedly because of an addiction to this medication"* (p.150).

In the same article, I also mentioned a case study reported by Snow, Logan, and Hollender (1980) of a 26-year-old man said to be 'addicted' to phenylephrine in nasal spray form and who consequently experienced 'toxic psychosis' (experiencing paranoid delusions, as well as visual and tactile hallucinations). Since the publication of my article a few more papers have been published on the topic (e.g., Scheire et al., 2023) including the recent qualitative study by Lakatos, Koltai, Ferencz, Demetrovics and Rácz (2025). Lakatos et al. stated that rhinitis

*Corresponding author.
E-mail: mark.griffiths@ntu.ac.uk

medicamentosa *"is frequently referred to as an addiction"* (p.558) but this does not appear to be the case. It has occasionally been described by some others as such (e.g., Snow et al., 1980) but it is not commonplace for RM to be described as an addiction in the extant literature.

The theoretical basis of the study by Lakatos et al. was the application of my components model of addiction (Griffiths, 2005). More specifically, the study used directed content analysis (Downe-Wamboldt, 1992; Hsieh & Shannon, 2005), a qualitative methodology which has been used in exactly the same way to analyze interview data examining other potential addictions such as smartphone addiction (Jameel, Shahnawaz, & Griffiths, 2019) and mukbang addiction (Kircaburun, Harris, Calado, & Griffiths, 2024) by applying the components model of addiction as the theoretical framework. In sum, the study by Lakatos et al. interviewed 20 individuals with rhinitis medicamentosa (RM), and attempted to identify behavioral and psychological examples of the six core components of addiction (i.e., salience, tolerance, mood modification, withdrawal, conflict, and relapse) in the interview transcripts. The authors claimed to have found evidence for all six components among 12 of the 20 interviewees. Such a 'confirmatory approach' will no doubt be criticized by others in the field (e.g., Billieux, Flayelle, Rumpf, & Stein, 2019). I have no problem with this methodology and have defended the confirmatory approach elsewhere (Griffiths, 2019). However, in this commentary, I argue that the examples cited as evidence for the presence of addiction components is questionable in a number of instances.

NASAL SPRAY ADDICTION COMPONENTS: A BRIEF CRITIQUE

With regard to salience, my own view is that the sub-categories of salience identified (i.e., 'necessity', 'comparison shopping', and 'highest priority') are not robust indicators of salience. For instance, the example quote provided for the 'necessity' sub-category of salience (*"So, for me, the nasal spray was like the wallet or the phone*) [p.553]) simply refers to not being able to leave the house without the alleged object of the addiction. The example of the 'wallet' has little to do with salience (given that almost everyone would not leave their house without having some way to pay for things while they are out), and the use of the word 'phone' here (at worst) is more akin to nomophobia ('no mobile phone phobia'; Yildirim & Correia, 2015) than salience, and which is highly prevalent among most people who have a smartphone (Al-Mamun et al., 2025). The 'comparison shopping' sub-category (i.e., searching for the cheapest price of nasal spray) is not an activity that will be done with great frequency (once a day at most, but more likely once a week or once a month if bought in bulk) and is therefore not a robust indicator of salience.

For the sub-category of 'the highest priority', the example quote provided ("*Well, especially while driving when [my nose] got blocked… I often pulled over, leaned back on the seat, and used the drops. And when it was fine, I continued driving, and then everything was fine"* [p.553]) is arguably medical necessity rather than salience. The authors also noted that in relation to salience, two of their participants *"[interrupted] their work to take a dose or request favours from others to go to the pharmacy while they cannot"* (p.554). However, it is hard to see why such behavior is categorized as salience unless it happened constantly on a daily basis and occurred over a long period of time. Even if the use of the nasal spray happened multiple times a day, the time taken to apply the spray is a few seconds at most and would not greatly interrupt work (or any other activity). I also noted in the paper that the sub-category 'efforts to reduce dosage' was classified under tolerance but this is a behavior more fitting of relapse. Tolerance always refers to an increase in the behavior over time, not a decrease in behavior.

With reference to 'mood modification', the sub-categories of 'anger, frustration' and 'mood instability' (*"negative emotions triggered by the cessation of its effects, such as frustration, irritability, anger, aggression, and inner tension"* [p.555]) relate to mood states experienced if unable to use nasal spray, and would both be better classified as withdrawal symptoms. Mood modification refers to using the substance or behavior to deliberately change mood state (e.g., to feel euphoria, to feel tranquilized, etc.) rather than a mood change resulting from not using the substance or behavior. Although the sub-category of 'relief' is a good example of mood modification for potentially addictive behaviors, the exemplar provided (*"I'm very happy when it clears up. That really cheers me up"* [p.553]) refers to relief from an unpleasant medical condition (assuming that the 'it' in the quote refers to a blocked nose) which would be what anyone wants from nasal spray and does not make it mood modification in the sense of addiction.

Within the components model of addiction, conflict is arguably the most important criterion in defining addictive behavior (Griffiths, 2019). Typically, it is the compromising of relationships, occupation and/or education that characterize the detrimental effects of a truly addictive behavior. However, the two sub-categories of 'interpersonal conflict' provided ('being made fun of' and 'justifications') are very minor and unlike what would be expected of a genuine addictive behavior. The exemplar for 'being made fun of (*"In our friends' group, well, let's just say it's kind of a joke, but not in a mean way at all, and it's nothing I can't handle"* [p.553]) does not appear to be particularly detrimental or cause conflict, and even the person providing the quote says it is something they can handle. The exemplar for 'justifications' (*"Once, they already made a comment to me at the pharmacy when I had just been there for nasal spray, asking why I was buying so much. And then I would always lie, saying it wasn't for me, because I didn't dare to admit the truth"* [p.553]) while slightly uncomfortable for a few seconds, is again at the very minor end of the conflict scale. Another example provided for inter-personal conflict was *"disapproving looks"* (p.555) but again, this is very minor and there is little to suggest that this (or any other of the examples of conflict) was sustained.

With regard to 'intra-psychic conflict', the example provided for the 'loss of control' sub-category (*"So, in the middle of the night, when I felt like I was suffocating, I lost control and used the spray"* [p.553]) is fleeting and not temporally sustained. To be classed as an addiction, the loss of control would need to be over a long period of time (typically over 12 months). The other two sub-categories ('feeling shame' and 'concerned about others' opinions') are also minor aspects of 'intra-psychic conflict' and there was no evidence provided that the symptoms were recurrent over long periods. Also, the second part of the quote referring to feeling ashamed (*"I pay for this increasingly expensive nasal spray every two weeks"* [p.554]) would arguably be a form of tolerance given that the person is paying more and more money over time for their 'drug of choice'.

With regards to relapse, the sub-category 'back to square one' includes a quote (*"Every time I feel like I could quit, I get sick again…I end up using the nasal spray again"* [p.554]) which I would argue is not a genuine relapse because the spray is being used for a medical reason (i.e., the person is sick). This cannot be called a relapse if it is a medical necessity. More generally, the authors noted that *"most of [their] interviewees reported a history of multiple attempts to quit…Relapses often coincide with illnesses, such as the common cold"* (p.555). Again, these 'relapses' occur out of medical necessity. Some may argue that *"getting sick again"* may (from the participant's perspective) reflect rebound symptoms rather than a genuine medical need. As seen with opioid use, even mild discomfort can trigger a return to use and lead back into the same pattern of dependence (Kosten & Baxter, 2019). However, this is not my personal view unless it could be definitively demonstrated that the use was genuinely not due to medical necessity. This highlights the need to carefully define what counts as genuine medical necessity before deciding whether such episodes represent genuine relapse or not.

Lakatos et al. (2025) also stated that the question may arise as to why they applied the components model of addiction rather than the DSM-5 addiction criteria in their study. However, the six criteria in the components model of addiction directly map onto all the DSM-5 criteria (e.g., Griffiths, King, & Demetrovics, 2014), therefore this assertion is not warranted or needed.

DISTINCTIVE FEATURES OF NASAL SPRAY ADDICTION: A BRIEF CRITIQUE

Some of the other categories generated in the qualitative analysis (e.g., 'sleep disorders', 'side effects', 'psychological influence') were classed as *"distinctive features of nasal spray addiction"* (p.555). However, sleep disorders are commonplace among many different substance and behavioral addictions (e.g., Alimoradi et al., 2019; Chen, Li, Tian, Li, & Yin, 2026; Reid-Varley, Martinez, & Khurshid, 2020; Roehrs & Roth, 2015), as are adverse side effects (e.g., Cleck & Blendy, 2008; Osorio-Molina et al., 2021). Moreover, the category of 'psychological influence' focused on feelings of anxiety, phobia, and panic attacks when individuals did not have their nasal spray to hand, consequences which have also been associated with nomophobia among smartphone users often due to the' fear of missing out' (Yildirim & Correia, 2015). Consequently, these three specific categories are not *"distinctive features of nasal spray addiction"*, and can be found in other potentially addictive behaviors.

NASAL SPRAY ADDICTION VERSUS NASAL SPRAY DEPENDENCE

In their interpretation of the findings, Lakatos et al. (2025) concluded that their analysis *"revealed individuals' frustrating and trouble-some experiences with nasal spray overuse"* (p.556). While this may be true, there was little evidence that such experiences were persistent and had occurred for longer than a 12-month period. They also noted that *"not every nasal spray user becomes dependent"* (p.557). This assertion conflates 'addiction' and 'dependence' because they are not the same thing. I now explain this to my students using my own current medical situation. On a daily basis, I currently take metformin hydrochloride and gliclazide (for my diabetes), lansoprazole (for silent acid reflux and a precancerous throat condition), gabapentin (for neuropathic pain relief in my feet), amitriptyline (to reduce spinal electric shocks), baclofen (to reduce severe leg spasms), and atorvastatin (for my heart, and to help control my lipid levels). I am completely dependent on a variety of drugs to live my day-to-day life but I am not addicted to them. Even if all the participants in the study were completely dependent on nasal spray to lead a normal everyday life, it would not necessarily mean that they were addicted to nasal spray.

DIAGNOSTIC CLASSIFICATION: CLINICAL IMPAIRMENT IS KEY

Lakatos et al. suggest that *"nasal decongestants lacking psychoactive effects (when used at average doses) may be considered under [the] category…Other (or Unknown) Substance-Related Disorders"* (p.557) in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2022). This concerns *"problematic patterns of use of a non-intoxicating substance not classifiable under traditional categories…and leading to clinically significant impairment or distress"* (p.557). While I agree that nasal decongestants are not intoxicating substances such as alcohol, nicotine, cocaine, and heroin, there was little evidence presented in the study by Lakatos et al. that any of the study participants experienced *"clinically significant impairment or distress"* required in the DSM-5 diagnosis or that there was any demonstrable empirical evidence that was *"clinically relevant, leading to negative consequences and functional impairments in daily life"* (p.557) as required in the ICD-11 diagnosis of 'other

specified disorders due to addictive behaviours' (11th revision of the *International Classification of Diseases*; World Health Organization, 2019).

CONCLUSION

The issue of whether nasal spray use can become addictive is an area worthy of empirical study and Lakatos et al. (2025) should be lauded for examining the issue. While the confirmatory approach has its critics, I have no problems with the methodological approach taken. However, the evidence for the presence of addiction components was (in my view) questionable in a number of instances, particularly in relation to conflict, as well as to mood modification, relapse, and salience. There was also little evidence that any of the consequences of nasal spray overuse were persistent (i.e., lasting over 12 months).

Funding sources: None

Conflict of interest: MDG has received research funding from *Norsk Tipping* (the gambling operator owned by the Norwegian government). MDG has received funding for a number of research projects in the area of gambling education for young people, social responsibility in gambling and gambling treatment from *Gamble Aware* (formerly the *Responsibility in Gambling Trust*), a charitable body which funds its research program based on donations from the gambling industry. MDG undertakes consultancy for various gambling companies in the area of player protection and social responsibility in gambling.

REFERENCES

Al-Mamun, F., Mamun, M. A., Kaggwa, M. M., Mubarak, M., Hossain, M. S., Muhit, M., … Sikder, M. T. (2025). The prevalence of nomophobia: A systematic review and meta-analysis. *Psychiatry Research*, *349*, 116521. https://doi.org/10.1016/j.psychres.2025.116521

Alimoradi, Z., Lin, C.-Y., Broström, A., Bülow, P. H., Bajalan, Z., Griffiths, M. D., … Pakpour, A. H. (2019). Internet addiction and sleep problems: A systematic review and meta-analysis. *Sleep Medicine Reviews*, *47*, 51–61. https://doi.org/10.1016/j.smrv.2019.06.004

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR* (5th ed.). American Psychiatric Association Publishing.

Billieux, J., Flayelle, M., Rumpf, H. J., & Stein, D. J. (2019). High involvement versus pathological involvement in video games: A crucial distinction for ensuring the validity and utility of gaming disorder. *Current Addiction Reports*, *6*(3), 323–330. https://doi.org/10.1007/s40429-019-00259-x

Chen, Y., Li, S., Tian, Y., Li, D., & Yin, H. (2026). Problematic social media use may be ruining our sleep: A meta-analysis on the relationship between problematic social media use and sleep quality. *International Journal of Mental Health and Addiction*, *24*, 262–297. https://doi.org/10.1007/s11469-024-01407-9

Cleck, J. N., & Blendy, J. A. (2008). Making a bad thing worse: Adverse effects of stress on drug addiction. *Journal of Clinical Investigation*, *118*(2), 454–461. https://doi.org/10.1172/JCI33946

Downe-Wamboldt, B. (1992). Content analysis: Method, applications, and issues. *Health Care for Women International*, *13*(3), 313–321. https://doi.org/10.1080/07399339209516006

Fleece, L., Mizes, J. S., Jolly, P. A., & Baldwin, R. L. (1984). Rhinitis medicamentosa. Conceptualization, incidence, and treatment. *Alabama Journal of Medical Sciences*, *21*(2), 205–208, 6375416.

Griffiths, M. D. (2005). A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance Use*, *10*, 191–197. https://doi.org/10.1080/14659890500114359

Griffiths, M. D. (2013). Non-prescription addiction: A brief look at nasal spray dependence. August 5. Retrieved September 25, 2025, from http://drmarkgriffiths.wordpress.com/2013/08/05/non-prescription-addiction-a-brief-look-at-nasal-spray-dependence/.

Griffiths, M. D. (2019). The evolution of the 'components model of addiction' and the need for a confirmatory approach in conceptualizing behavioral addictions. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences*, *32*, 179–184. https://doi.org/10.14744/DAJPNS.2019.00027

Griffiths, M. D., King, D. L., & Demetrovics, Z. (2014). DSM-5 internet gaming disorder needs a unified approach to assessment. *Neuropsychiatry*, *4*(1), 1–4. https://doi.org/10.2217/NPY.13.82

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Jameel, S., Shahnawaz, M. G., & Griffiths, M. D. (2019). Smartphone addiction in students: A qualitative examination of the components model of addiction using face-to-face interviews. *Journal of Behavioral Addictions*, *8*(4), 780–793. https://doi.org/10.1556/2006.8.2019.57

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (2024). Addictive symptoms of mukbang watching: A qualitative interview study using directed content analysis. *Emerging Trends in Drugs, Addictions, and Health*, *4*, 100147. https://doi.org/10.1016/j.etdah.2024.100147

Kosten, T. R., & Baxter, L. E. (2019). Effective management of opioid withdrawal symptoms: A gateway to opioid dependence treatment. *The American Journal on Addictions*, *28*(2), 55–62. https://doi.org/10.1111/ajad.12862

Lakatos, L., Koltai, B. G., Ferencz, V., Demetrovics, Z., & Rácz, J. (2025). Does nose spray addiction exist? A qualitative analysis of addiction components in rhinitis medicamentosa. *Journal of Behavioral Addictions*, *14*(1), 548–560. https://doi.org/10.1556/2006.2024.00078

Osorio-Molina, C., Martos-Cabrera, M. B., Membrive-Jiménez, M. J., Vargas-Roman, K., Suleiman-Martos, N., … Gómez-Urquiza, J. L. (2021). Smartphone addiction, risk factors and its adverse effects in nursing students: A systematic review and meta-analysis. *Nurse Education Today*, *98*, 104741. https://doi.org/10.1016/j.nedt.2020.104741

Pearson, M. M., & Little, R. B. (1969). The addictive process in unusual addictions: A further elaboration of etiology. *American Journal of Psychiatry*, *125*(9), 1166–1171.

Ramey, J. T., Bailen, E., & Lockey, R. F. (2006). Rhinitis medicamentosa. *Journal of Investigational Allergology and Clinical Immunology*, *16*(3), 148–155.

Reid-Varley, W. B., Martinez, C. P., & Khurshid, K. A. (2020). Sleep disorders and disrupted sleep in addiction, withdrawal and abstinence with focus on alcohol and opioids. *Journal of the Neurological Sciences*, *411*, 116713. https://doi.org/10.1016/j.jns.2020.116713

Roehrs, T. A., & Roth, T. (2015). Sleep disturbance in substance use disorders. *Psychiatric Clinics of North America*, *38*(4), 793–803. https://doi.org/10.1016/j.psc.2015.07.008

Scheire, S., Germonpré, S., Van Tongelen, I., Mehuys, E., Crombez, G., Gevaert, P., & Boussery, K. (2023). The indispensable nasal decongestant: Patients' views and perspectives on nasal decongestant overuse. *Journal of Allergy and Clinical Immunology: In Practice*, *11*(2), 602–609, e601. https://doi.org/10.1016/j.jaip.2022.11.022

Snow, S. S., Logan, T. P., & Hollender, M. H. (1980). Nasal spray 'addiction' and psychosis: A case report. *British Journal of Psychiatry*, *136*, 297–299. https://doi.org/10.1192/bjp.136.3.297

World Health Organization. (2019). *International classification of diseases and related health problems*. (11th revision). Retrieved September 25, 2025, from https://www.who.int/standards/classifications/classification-of-diseases.

Yildirim, C., & Correia, A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, *49*, 130–137. https://doi.org/10.1016/j.chb.2015.02.059