



The Mighty Powers of Chuckles, Giggles, Guffaws: The Public Health Benefits of Laughter

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ABSTRACT

Laughter is increasingly acknowledged for its therapeutic potential, offering a noninvasive, cost-effective, and accessible method for enhancing both physical and mental health. Research draws attention to the numerous advantages, including stress relief, immune system improvement, cardiovascular benefits, pain reduction, and mood enhancement. Laughter stimulates immune cells like natural killer cells and T cells, improves endorphin production, lowers cortisol levels, and contributes to resilience in health, disease, overall well-being. Studies show laughter's effectiveness in reducing symptoms of depression, anxiety, and stress, with significant gains observed in vulnerable groups such as cancer patients and the elderly. Laughter yoga and therapeutic laughter programs promote mental health, demonstrating improved life quality and pain tolerance. Laughter plays an essential role in fostering social unity by strengthening relationships and encouraging cooperation. It has been shown to have positive impact on cognitive functioning, particularly in lowering dementia risk among older adults. Cardiovascular health also benefits from laughter, improving blood circulation and lowering blood pressure. Despite encouraging findings, challenges such as inconsistent intervention methods and limited study quality persist, calling for further research to establish laughter as a reliable therapeutic tool. This review emphasizes the growing evidence supporting laughter's contribution to comprehensive health, advocating for its broader use in health care and mental health contexts. As a universally accessible, noninvasive treatment, laughter represents a transformative force in public health, enhancing physical health, emotional well-being, social ties, and overall resilience.

Keywords: epigenesis, community well-being, population resilience

1 Introduction

Laughter, often hailed as “the best medicine,” has long been recognized in public health for its profound impact on both mental and physical well-being. As a natural and spontaneous human behavior, it offers numerous health benefits that extend beyond its immediate effects of amusement and joy. Public health research now addresses laughter's potential to alleviate the burden of chronic diseases, such as hypertension, diabetes, and depression, which continue to place immense strain on health care systems globally. With the increasing prevalence of these conditions, integrating laughter into preventive and treatment strategies could not only improve individual health outcomes but also offer a cost-effective, accessible intervention that promotes overall public health.

The current status of research highlights the significant health benefits of laughter, which have wide-ranging effects on the human body. When a person laughs, a series of beneficial responses are triggered. Muscles relax, tension fades, and stress levels decrease, with the relaxation lasting up to 45 minutes after a hearty laugh. Laughter also activates the immune system by lowering stress hormones and increasing the production of immune cells and antibodies, strengthening the body's defense mechanisms. It stimulates the release of endorphins, which improve mood and can temporarily reduce pain. An additional benefit is its positive impact on cardiovascular health, as it enhances blood vessel function and circulation, helping to prevent heart disease and hypertension. Laughter burns calories, 10-15 minutes of laughter a day is suggested to possibly burn up to 40 calories, potentially aiding in weight loss. It promotes a positive mental



state, supporting emotional resilience during stressful situations by fostering joy and hope (Hajar, 2023). Recent studies have further explored the health benefits of laughter, particularly as a stress reliever. A systematic review and meta-analysis examined the impact of spontaneous laughter on cortisol levels, a key indicator of stress. This analysis included eight studies with a total of 315 participants, demonstrating a significant reduction in cortisol levels by 31.9% following laughter interventions, with a 95% confidence interval ranging from -47.7% to -16.3%. This effect was observed across various laughter interventions, including humor and comedy videos, laughter sessions with trained therapists, and self-administered laughter programs. Sensitivity analyses indicated that even a single session of laughter could induce a 36.7% reduction in cortisol levels. These findings emphasize laughter's potential as an adjunctive therapy to improve well-being and reduce stress (Kramer & Leitao, 2023). In the context of global health, laughter plays a crucial role in aligning with the World Health Organization's definition of health as a "state of complete physical, mental, and social well-being." Laughter not only contributes to physical relaxation and stress reduction but also promotes social connections and a positive outlook on life, thus playing an integral role in enhancing overall health. Due to its broad impact, the therapeutic potential of laughter is garnering growing attention from researchers across diverse health contexts, from general stress management to targeted therapeutic interventions.

The knowledge gap surrounding the health benefits of laughter has sparked increasing interest in laughter-inducing therapies as non-pharmacological treatments. A systematic review and meta-analysis evaluated the effectiveness of laughter therapies in improving mental health, particularly in populations suffering from depression. The study found that laughter therapies, including both spontaneous and simulated laughter interventions, showed promising results in reducing depressive symptoms. The review also noted, conversely, that the overall quality of the studies was suboptimal and carried significant risks of bias. Despite these limitations, the authors highlighted the potential of laughter therapy as a cost-effective and simple intervention, particularly for elderly populations, and called for more rigorous research to confirm its efficacy (van der Wal & Kok, 2019). The therapeutic use of laughter is also evident in the emerging practice of laughter yoga and therapy, which combine breathing techniques with voluntary laughter exercises, and have been studied for their effects on both physical and mental health. A systematic review found that laughter therapy was effective in reducing pain, stress, anxiety, and depression, while improving sleep quality in various patient populations. Although the evidence regarding its impact on somatization, blood glucose, and blood pressure remains limited, the study concluded that laughter therapy could be a valuable approach to improving overall health and well-being, particularly as a non-invasive, low-cost intervention in both hospital and community settings (Uner *et al.*, 2022).

Several challenges persist despite promising research findings regarding the health benefits of laughter. The majority of studies examining the effects of laughter therapy suffer from methodological limitations, including small sample sizes, inconsistent intervention designs, and high risks of bias. These issues hinder the ability to draw definitive conclusions about the long-term effects and therapeutic efficacy of laughter interventions. The absence of standardized protocols for laughter-based therapies further complicates the comparison of results across different studies. This variability in intervention designs also limits the generalizability of findings to diverse populations and health conditions. While laughter has shown potential in reducing stress, improving mood, and enhancing immune function, questions remain about its effectiveness in treating more complex health conditions. Additional research is needed to explore how laughter can be effectively integrated into comprehensive treatment plans for chronic conditions such as hypertension, diabetes, and cardiovascular disease. The long-term efficacy of laughter-based interventions, particularly in diverse patient groups, remains uncertain and requires continued investigation.

This review article intends to synthesize the current evidence on the health benefits of laughter, with particular focus on its physiological, psychological, and social impacts. The research seeks to provide an overview of the current understanding of its central role in enhancing well-being, by critically evaluating a range of studies on laughter therapies and humor-based interventions. An additional objective is to identify

key gaps in knowledge and challenges within the field and advocate for research that will strengthen the scientific evidence supporting the therapeutic applications of laughter. The review seeks to consolidate existing findings and encourage future investigations into the use of laughter as an adjunctive therapy in clinical practice, with the goal of advancing its potential as a simple, cost-effective, and widely accessible intervention for improving public health outcomes in diverse patient populations. This study ultimately aims to emphasize the importance of laughter in public health, advocating for its integration into preventive and therapeutic strategies to promote overall well-being.

2 The therapeutic mechanisms of laughter and their implications for immune function, mental health, and social cohesion

Laughter has been shown to exert a wide range of beneficial effects on health, positively influencing multiple physiological and psychological systems. It enhances immune function by increasing the production of antibodies and activating immune cells, thereby improving the body's defense mechanisms. Laughter triggers the release of endorphins, which act as natural pain relievers, and promotes cardiovascular health by improving blood flow and reducing stress hormones. Beyond these physiological benefits, laughter also fosters social bonding, enhances cognitive function, and contributes to overall psychological well-being, mitigating the effects of stress and promoting emotional resilience [Image 1].

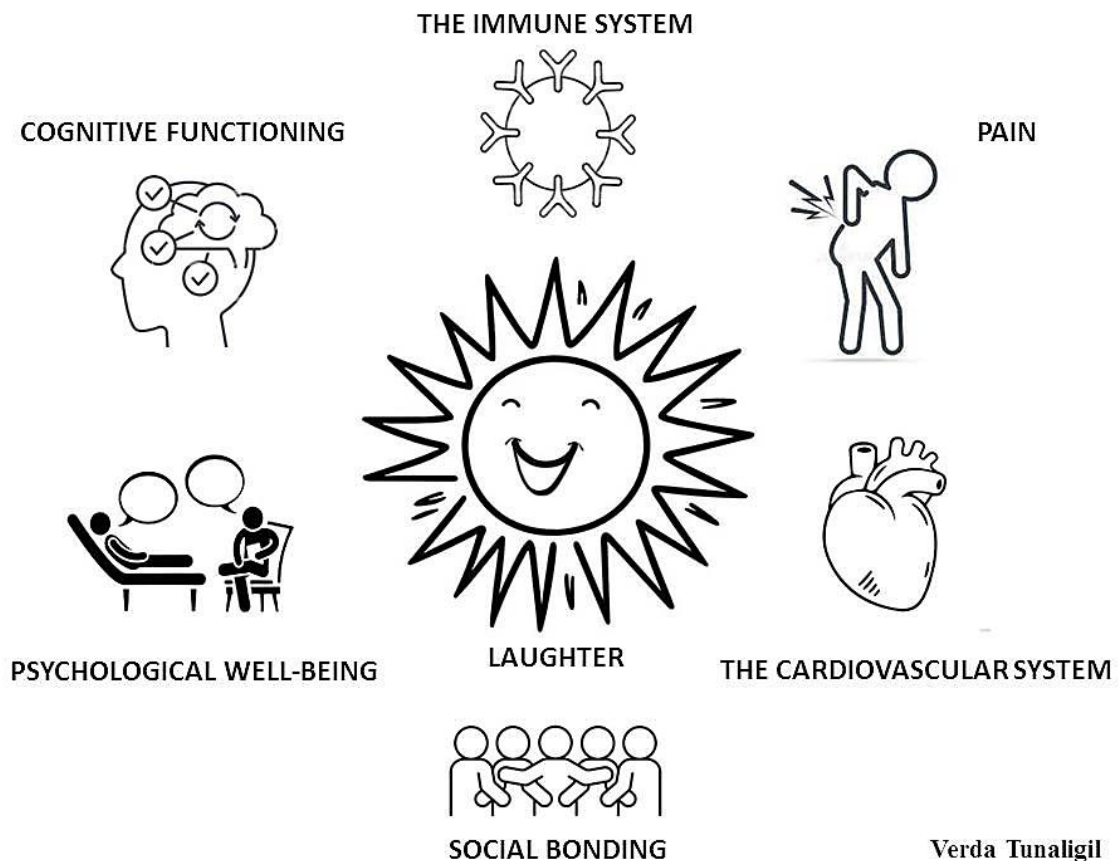


Image 1: *The positive effects of laughter on human health and happiness.*

2.1 The role of laughter in enhancing immune function and managing health conditions

Laughter has a significant positive impact on immune function by stimulating immune cells, such as natural killer (NK) cells, T cells, and immunoglobulins like IgG, IgA, IgM, which help enhance disease resistance. It also reduces cortisol, a stress hormone that weakens immunity. Research indicates that laughter increases NK cell activity ($p < 0.01$) and immunoglobulin levels (IgG, $p < 0.02$; IgA, $p < 0.01$; IgM,

$p < 0.09$), with effects lasting up to 12 hours after a humorous intervention (Berk *et al.*, 2001; Hajar, 2023). A study involving 52 participants demonstrated that laughter enhances leukocyte subsets, including activated T cells, B cells, and helper T cells ($p < 0.01$ to $p < 0.02$). Laughter yoga also provides therapeutic benefits. A study involving 42 individuals with type 2 diabetes showed a reduction in hemoglobin A1c of 0.31%, with a 95% confidence interval ranging from -0.54 to -0.09 , after 12 weeks of laughter yoga (Hirosaki *et al.*, 2023). A study involving 120 university students revealed cortisol reductions following both laughter yoga and watching a comedy video (Fujisawa *et al.*, 2018). Laughter plays a crucial role in public health by enhancing immune function and reducing stress, which can improve overall well-being and prevent illness. Its therapeutic benefits, such as boosting immune cells and lowering stress hormones, contribute to healthier populations, potentially reducing health care costs and raising quality of life on a larger scale.

2.2 The psychological benefits of laughter on mental health and well-being

Laughter has been shown to alleviate symptoms of stress, anxiety, and depression. A meta-analysis of randomized controlled trials involving 157 participants found a standardized mean difference of -1.14 in reducing anxiety, with a 95% confidence interval ranging from -1.95 to -0.34 (Demir Dogan, 2020). Another meta-analysis involving 814 participants revealed significant reductions in depression and anxiety, with longer interventions leading to more substantial benefits for depression (Zhao *et al.*, 2019). In a different study, laughter therapy significantly improved mood and reduced burnout in cancer patients and their caregivers (Moon *et al.*, 2024), underlining its therapeutic potential for enhancing mental health in vulnerable populations and supporting public health initiatives aimed at promoting emotional well-being.

2.3 The impact of laughter on cognitive function and neural processes

A 6-year cohort study conducted in Japan with 12,165 independent adults aged ≥ 65 investigated the relationship between laughter and dementia risk. The hazard ratio for those with a higher variety of laughter occasions versus those with fewer was 0.84, indicating a reduced dementia risk for a 95% confidence interval of 0.72 to 0.98, P for trend less than 0.00. Women who engaged in a higher variety of laughter occasions had a hazard ratio of 0.78, highlighting the cognitive benefits of laughter for a 95% confidence interval of 0.63 to 0.96, P for trend less than 0.00 (Wang *et al.*, 2022). These findings highlight the potential cognitive benefits of laughter, which could contribute to healthier aging and have important implications for public health strategies aimed at dementia prevention.

2.4 The social and cultural significance of laughter in strengthening interpersonal bonds

Laughter plays a vital role in fostering social bonds and enhancing mutual understanding and cooperation. This is particularly significant in larger human groups, where laughter serves as a bonding mechanism. Evidence suggests that laughter has been part of human evolution for approximately 2.5 million years, beginning with the genus *Homo*. (Dunbar, 2022). Research on romantic couples indicates that shared laughter is associated with improved relationship quality, closeness, and social support. A study with 71 heterosexual couples found that simultaneous laughter was positively associated with relationship well-being (Kurtz & Algoe, 2015). Cross-cultural studies explore how laughter is perceived and its role in conversation across different societies, contributing to a deeper understanding of both universal and culturally specific aspects of laughter (Bryant & Bainbridge, 2022). These social functions of laughter not only strengthen individual relationships but also support public health by fostering community connections and promoting mental well-being.

2.5 The cardiovascular benefits of laughter in promoting heart health

Laughter is beneficial for cardiovascular health, primarily by boosting nitric oxide production, which enhances blood vessel function and lowers blood pressure, thereby reducing cardiovascular disease risk. A study with 40 participants watching a comedy video showed that laughter increased pain tolerance and

improved circulation (Lapierre *et al.*, 2019). Laughter has the potential to be a simple, cost-effective intervention for supporting heart health and preventing cardiovascular conditions, making it an important tool in public health strategies aimed at improving overall well-being.

2.6 The therapeutic effects of laughter on pain perception, other aspects of physical health, and quality of life

Laughter is believed to reduce pain perception through the release of endorphins, to offer therapeutic benefits across various health conditions. An interesting outcome in a study involving 40 participants, however, demonstrated that those who watched a comedy video showed no significant change in pain tolerance ($p > 0.05$), while those who watched a documentary experienced a significant decrease in pain (17 ± 5 N, $p < 0.00$) (Lapierre *et al.*, 2019). In another study, laughter therapy provided substantial relief in terms of pain and mood disturbances among terminally ill cancer patients and their caregivers ($p < 0.00$) (Moon *et al.*, 2024). Laughter yoga has also been shown to improve health-related quality of life (HRQOL) in cancer patients undergoing chemotherapy, with significant improvements in emotional functioning, physical functioning, fatigue, and pain (Namazinia *et al.*, 2023). A 12-week randomized controlled trial with 235 participants revealed that laughter yoga improved weight, body mass index, subjective stress, and HRQOL in individuals at risk for metabolic syndrome (Funakubo *et al.*, 2022). Laughter demonstrated potential in improving physical health in other areas, such as a study involving 299 participants that compared laughter exercises to artificial tears for treating dry eye disease. The laughter group showed significant improvements in the ocular surface disease index (OSDI) score and tear break-up time, suggesting its potential as an alternative treatment for dry eye disease (Li *et al.*, 2024). These findings emphasize laughter's broad therapeutic potential, supporting its inclusion in public health strategies to enhance physical health and HRQOL.

3 A qualitative analysis of the therapeutic potential of laughter on health and well-being

3.1 Key points on laughter's therapeutic potential

Laughter, commonly regarded as a spontaneous expression of joy, confers substantial benefits for both physical and mental health. Increasing evidence supports its role in enhancing immune function, alleviating stress, and promoting cardiovascular and mental well-being. Mechanisms such as the release of immune-boosting molecules and endorphins position laughter as an accessible, non-pharmacological health intervention. This review examines the effects of laughter on immune function, stress reduction, pain tolerance, cardiovascular health, mental well-being, and cognitive function, drawing on recent studies that highlight its therapeutic potential. Interventions such as laughter yoga and laughter therapy have demonstrated efficacy in improving immune function, reducing stress, and enhancing overall health. The expanding body of literature positions laughter as a powerful tool for both individual and community health, with implications for broader applications in health care and mental health settings. Future research should assess the molecular mechanisms underlying laughter's impact on immune function and mental health, further elucidating its therapeutic potential. Laughter holds promise as a non-pharmacological approach for improving immune function, pain tolerance, promoting cardiovascular and mental health (Akimbekov & Razzaque, 2021; Li *et al.*, 2024; Namazinia *et al.*, 2023).

Table 1: A summary of the key points from the qualitative analysis on laughter's therapeutic potential.

HEALTH ASPECT	THERAPEUTIC EFFECT OF LAUGHTER	KEY FINDINGS	REFERENCES
Immune function	Improves immune function through enhanced immune cell production and lowered cortisol.	Increases T cells and immunoglobulins, critical for fighting infections. Reduces cortisol by 31.9%, supporting immunity.	(Akimbekov & Razzaque, 2021; Berk <i>et al.</i> , 2001)
Stress and burnout	Reduces stress and burnout, particularly in high-stress environments.	Significant reductions in stress and burnout among nurses, with improved life satisfaction.	(Berk <i>et al.</i> , 2001; Si <i>et al.</i> , 2022)
Pain tolerance	Increases pain tolerance through the release of endorphins.	Watching comedy videos increases pain tolerance compared to documentaries. Effective in pain management, especially in chronic conditions.	(Hajar, 2023; Lapierre <i>et al.</i> , 2019)
Cardiovascular health	Improves blood circulation, lowers blood pressure, and reduces heart disease risk by stimulating nitric oxide production.	Enhances blood flow and circulation, contributing to improved cardiovascular health. Mood improvement also supports physical health.	(Akimbekov & Razzaque, 2021; Lapierre <i>et al.</i> , 2019)
Mental health	Alleviates anxiety, depression, and stress, improving emotional well-being.	Laughter therapy reduces anxiety, mood disturbances, and burnout. Long-term laughter interventions help reduce depression.	(Fujisawa <i>et al.</i> , 2018; Funakubo <i>et al.</i> , 2022; Hajar, 2023)
Laughter therapy and yoga in older adults	Improves psychological resilience, reduces loneliness, and enhances quality of life.	Significant improvements in well-being and mental health among older adults, particularly in nursing homes.	(Uner <i>et al.</i> , 2022)
Social bonding	Strengthens social bonds, improves relationship quality, and promotes a sense of belonging.	Shared laughter fosters cooperation, mutual understanding, and intimacy in romantic relationships.	(Hopler, 2025; Kramer & Leitao, 2023)
Public health	Non-pharmacological intervention with potential for broader application in health care and mental health settings.	Laughter yoga and laughter therapy show promise in improving immune function, mental health, and overall well-being.	(Li <i>et al.</i> , 2024; Namazinia <i>et al.</i> , 2023; Ozturk <i>et al.</i> , 2023)

Laughter has been consistently linked to improved immune function. Studies show that laughter increases the production of critical immune cells, such as T cells and immunoglobulins, which are essential for fighting infections. Laughter may play an integral role in enhancing disease resistance (Hajar, 2023). Laughter's ability to lower cortisol, a hormone that suppresses immunity, further supports its importance in bolstering the immune system. A review of laughter interventions found a remarkable 31.9% reduction in cortisol levels, which accentuates the potential of laughter as a stress management tool (Kramer & Leitao, 2023). Laughter-based interventions, such as laughter yoga, have shown promise in reducing perceived

stress and burnout, especially in high-stress environments. A randomized controlled trial of laughter yoga in nurses during the COVID-19 pandemic demonstrated significant reductions in stress and burnout, alongside improvements in life satisfaction (Si *et al.*, 2022). This suggests that laughter interventions can offer practical solutions in alleviating stress and burnout, particularly in professions demanding high emotional and physical resilience. These findings align with broader studies on the relationship between laughter and reduced cortisol levels, which further corroborates its role in stress management (Kramer & Leitao, 2023). Laughter's effect on pain tolerance further highlights its therapeutic value. Research investigating the influence of laughter on pain tolerance found that watching a comedy video significantly increased pain tolerance compared to watching a documentary. This effect is likely linked to the endorphins released during laughter, which act as natural painkillers. These findings suggest that laughter may be an effective complementary intervention for managing pain, particularly in chronic or acute conditions where pain relief is a priority (Lapierre *et al.*, 2019). In the context of terminally ill cancer patients, laughter therapy has been shown to reduce pain, mood disturbances, and burnout in both patients and caregivers (Moon *et al.*, 2024). Laughter also plays a role in cardiovascular health. By stimulating the production of nitric oxide, laughter helps dilate blood vessels, improving circulation and lowering blood pressure (Hajar, 2023). This vascular effect can contribute to a reduced risk of heart disease, making laughter a valuable tool in cardiovascular health. The positive influence of laughter on blood flow is further supported by studies showing that laughter improves overall mood, which may enhance both physical and mental health (Hajar, 2023; Lapierre *et al.*, 2019). Beyond its physical benefits, laughter has been shown to have a positive impact on mental health by alleviating symptoms of stress, anxiety, and depression. Studies on laughter therapy have consistently demonstrated improvements in mental health outcomes. For instance, a meta-analysis on the effects of laughter therapy found that it significantly reduces anxiety levels, providing a non-invasive and cost-effective alternative to traditional treatments (Demir Dogan, 2020). In palliative care, laughter therapy has been shown to reduce mood disturbances and burnout in both patients and caregivers, enhancing emotional well-being in terminally ill individuals (Moon *et al.*, 2024). Similarly, long-term laughter interventions have been found to significantly reduce depression, indicating that laughter can serve as an effective, complementary intervention in mental health care (Zhao *et al.*, 2019). Laughter yoga, a structured intervention combining laughter exercises with yoga, has been particularly effective for improving the well-being of older adults. A randomized controlled trial found that laughter yoga significantly reduced loneliness, improved psychological resilience, and enhanced the quality of life among older adults in nursing homes (Ozturk *et al.*, 2023). These outcomes are essential for promoting mental health in aging populations, who may face challenges such as social isolation and reduced resilience. The positive effects of laughter yoga highlight its potential as a valuable intervention for improving the psychological health of older adults, especially in institutional settings. The role of laughter in social bonding is a key factor in human interaction and connection. Laughter's role extends beyond individual health benefits; it also strengthens social bonds. Shared laughter fosters mutual understanding, cooperation, and a sense of belonging, which are vital for emotional support and social cohesion (Dunbar, 2022). In romantic relationships, shared laughter has been linked to improved relationship quality and intimacy, reinforcing laughter's significance in social and emotional connections (Kurtz & Algoe, 2015). By promoting positive social interactions, laughter serves as a key mechanism in human bonding, enhancing interpersonal relationships and overall emotional well-being (Dunbar, 2022). The therapeutic effects of laughter and references key studies supporting these findings are presented [Table 1].



Image 2: *Capan Kavruk, N., Tunaligil, V., Ogut, U., & Demir, S. S., former classmates from Robert College enjoying the health benefits of laughter. Thursday, September 27, 2018, Istanbul, Turkey.*

Experiences of joy have enduring positive effects on both the mind and body, on psychological and physiological health. The shared experiences of laughter and joy exert sustained positive effects on both mental and physical well-being. These interactions promote well-being and are linked to increased longevity, bringing to the forefront the importance of social connection in overall health. Laughter, ultimately, fosters deeper bonds, strengthening relationships that further support long, healthy lives [Image 2].

Palliative care professionals are increasingly recognizing the importance of humor in managing serious illnesses. Humor is often used as a coping mechanism for patients, and it is essential for physicians to identify when humor is beneficial or when it may mask deeper emotional issues. A study on professional considerations in laughter therapy in coping with serious illness highlights the growing recognition among palliative care professionals of the role humor plays in managing serious health conditions and emphasizes the need for empathetic decision-making in the use of laughter in clinical settings (Chammas, 2024). The engagement between Laughter Care Specialists (LCSs) and families of individuals with dementia in long-term care was investigated, highlighting the importance of family involvement in dementia care. Through semi-structured interviews with LCSs ($n=8$), the study found that while family members were initially hesitant about Laughter Care, they became more receptive after witnessing positive interactions with their relatives. Families benefitted by observing joyful interactions, discovering new communication methods, and fostering connections, especially during end-of-life stages. The findings suggest that Laughter Care provides innovative communication strategies and emotional support during bereavement (DiGiacomo *et al.*, 2024).

3.2 Timeless scholarly interpretations of laughter that capture the essence in a nutshell

Laughter has consistently been a focal point of scholarly investigation. To conclude this article, it is apt to reflect on the enduring wisdom encapsulated in the timeless quotes of prominent scholars and scientists, along with an analysis of the psychological, physiological, and social implications of laughter. This synthesis aims to offer a comprehensive exploration of the multifaceted impact of laughter on emotional well-being, physical health, and social dynamics.

Table 2: *Qualitative analysis of scholarly quotes on laughter.*

QUOTE	SCHOLAR	EXPERTISE	PSYCHOLOGICAL	PHYSIOLOGICAL	SOCIAL
			IMPLICATIONS		
“We don’t laugh because we’re happy – we’re happy because we laugh.”	William James	Philosopher and psychologist, founder of American psychology.	Suggests that laughter can lead to happiness, emphasizing a bidirectional relationship between emotion and behavior.	Laughter may trigger emotional changes, influencing mood and stress responses.	Shared laughter can strengthen social bonds, promoting group cohesion.
“The highest state is laughter.”	Maharishi Mahesh Yogi	Spiritual teacher and founder of Transcendental Meditation.	Laughter seen as a form of spiritual elevation, linked to mental clarity and mindfulness.	Induces relaxation and reduces physiological tension, similar to meditation.	Enhances spiritual unity and group harmony through shared joy.
“Hearty laughter is a good way to jog internally without having to go outdoors.”	Norman Cousins	Journalist known for research on laughter’s health benefits.	Laughter serves as mental exercise, improving emotional resilience and well-being.	Acts like physical exercise by stimulating heart rate and endorphins.	Promotes group activity and interaction, benefiting both mental and physical health.
“When we feel joyful, euphoric, happy, we are more open to life, more capable of seeing things clearly and handling daily tensions.”	Leo F. Buscaglia	Professor focused on human relationships and self-esteem.	Joy and laughter improve cognitive flexibility, aiding stress management.	Reduces cortisol, enhancing physical relaxation and stress reduction.	Strengthens social bonds and group problem-solving through shared positive emotions.
“If we couldn’t laugh we would all go insane.”	Robert Frost	Renowned poet with philosophical insights on human psychology.	Highlights laughter as essential for emotional stability and mental health.	Prevents negative health outcomes by reducing stress and maintaining balance.	Social laughter helps maintain mental equilibrium in group settings, preventing isolation.

“Laughter is an instant vacation.”	Milton Berle	Comedian known for exploring laughter’s therapeutic value.	Provides immediate emotional relief from stress, enhancing mood.	Induces relaxation, offering a break similar to physical rest.	Fosters social relaxation and enjoyment, enhancing group cohesion.
“Laughter is a great way to relax the whole body, and it helps reduce the stress hormone cortisol.”	Dr. Lee Berk	Researcher on laughter’s health benefits.	Directly reduces stress, promoting emotional well-being.	Lowers cortisol and boosts endorphins, improving physical health.	Strengthens social ties by creating a relaxed, stress-free atmosphere.
“Laughter is an excellent antidote to stress and anxiety.”	Dr. Michael Miller	Cardiologist focusing on laughter’s effect on heart health.	Alleviates anxiety by releasing neurotransmitters that promote relaxation.	Improves cardiovascular health by reducing blood pressure and enhancing circulation.	Builds social connections, making group interactions more positive and relaxed.
“Laughter helps to increase blood flow, relax muscles, and reduce stress levels.”	Dr. Jennifer A. E. L. Smith	Psychologist specializing in laughter therapy.	Relieves tension and helps regulate emotional responses to stress.	Boosts blood flow, relaxes muscles, and lowers physical stress markers.	Promotes group cohesion by creating a relaxed and supportive environment.

A qualitative analysis of scholarly perspectives on the multifaceted effects of laughter is presented, drawing from experts in various fields. Each quote is analyzed in terms of its psychological, physiological, and social implications, highlighting the diverse benefits laughter offers to individuals and groups. The psychological implications emphasize laughter’s potential to foster emotional well-being, enhance mood, and support stress management. Physiologically, laughter is recognized for its ability to reduce stress markers, improve cardiovascular health, and induce relaxation. From a societal perspective, laughter serves as a powerful tool for strengthening bonds, promoting group cohesion, and mitigating social isolation. These insights reflect the complex, bidirectional relationship between laughter and mental, physical, and social health, as seen in the work of scholars such as William James, Maharishi Mahesh Yogi, Norman Cousins, Leo F. Buscaglia, Robert Frost, Milton Berle, Dr. Lee Berk, Dr. Michael Miller, Dr. Jennifer A. E. L. Smith. The significance of laughter is emphasized in enhancing both individual resilience and collective harmony, with each scholar contributing unique perspectives on how this simple act influences human behavior and well-being (Hopler, 2025) [Table 2]. In the context of global public health, laughter proves to be a universally accessible and powerful tool that enhances individual well-being and strengthens collective resilience, promoting social cohesion across different communities.

4 Balancing scientific perspectives: The pros and cons of laughter

Adverse effects of laughter are infrequently reported, with the overall benefit-harm balance generally regarded as favorable. When harms do occur, they tend to be immediate and dose-dependent, with the highest risks associated with uncontrollable laughter (Ferner & Aronson, 2013; Sakurada *et al.*, 2020). Although rare, cases of laughter-induced syncope have been documented in the literature (Bloomfield, 2005; Haddad & Haddad-Lacle, 2013; Nishida, Hirota, & Tokeshi, 2008). A study from Japan reported that daily frequency of laughter represents an independent risk factor for all-cause mortality and cardiovascular

disease in a general population (Sakurada *et al.*, 2020). Despite these scholarly works, the benefits of laughter clearly appear to outweigh the potential harms.

5 Conclusion

The numerous studies reviewed highlight laughter's diverse benefits, from boosting the immune system and cardiovascular health to enhancing mental well-being and social bonding. These findings suggest that laughter therapy, yoga, and spontaneous laughter are valuable interventions for improving both physical and mental health. Further research is needed to explore these effects across different populations and conditions to solidify the evidence for laughter as a therapeutic tool. The studies are categorized under broader themes, each addressing various aspects of laughter therapy, including its impact on mental health, cognitive functioning, quality of life, family caregiving, and cultural perceptions. Laughter triggers a cascade of positive physiological and psychological responses, fostering social cohesion and improving public health outcomes. Its influence transcends time and space, resonating across both the present moment and imagination. Within the resonance of laughter resides a therapeutic mechanism that has the potential to foster emotional well-being, uplifting the human spirit, and reinforcing the social fabric through the cultivation of joy. Laughter thus emerges as a symbol of vitality, providing emotional and physical restoration while promoting enduring well-being. Its therapeutic potential is a key contributor to holistic health and the strengthening of social bonds. In a world increasingly focused on addressing the complex challenges of global public health, laughter stands as a universal, accessible, and transformative force, capable of fostering individual well-being and uniting communities in resilience and joy.

6 Declarations

No copyrighted or fee-based icons were used in the creation of Image 1. The illustrations were sourced from public domain resources.

6.1 Study limitations

The current literature on the therapeutic benefits of laughter is limited by inconsistent intervention designs, small sample sizes, and subjective outcome measures, which hinder the ability to draw definitive conclusions. While more rigorous, controlled, and long-term studies are needed to fully understand the mechanisms and effects of laughter, this study consolidates scientific evidence on its multifaceted benefits for both physical and mental health and draws attention to its potential as a non-invasive, cost-effective intervention. Despite these research limitations, this manuscript provides a foundation for future studies and practical applications aimed at improving health outcomes.

6.2 Acknowledgement

The author would like to thank Mr. Gokturk Ozen for his technical proficiency in preparing the photograph presented in Image 2 for publication.

6.3 Use of generative artificial intelligence and AI-assisted technologies in the writing process

During the preparation of this work, the author used OpenAI GPT-4o technology for minor tasks such as paragraphing, section partitioning, formatting, standardizing the reference list. No AI-tool was used for content generation. The author thoroughly reviewed and edited the content as necessary and assumes full responsibility for the published article.

6.4 Competing interests

The author declares that there are no conflicts of interest to disclose in relation to this work.

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