



Exploring Factors Affecting Mental Health, Psychological Impact, and Coping Facilitators Among Acid Attack Survivors: An Integrative Review

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ARTICLE INFO

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Dates:

Received: 18-02-2026

Accepted: 27-05-2026

Published: 26-06-2026

Keywords:

Acid attack survivors,
Psychological impact,
Coping strategies,
Gender-based violence

How to Cite:

Dhama V, Dhirja, Kumar R. Exploring Factors Affecting Mental Health, Psychological Impact, and Coping Facilitators Among Acid Attack Survivors: An Integrative Review. *Indian Journal of Clinical Psychiatry*. 2026;6(1): 31-45.

doi: 10.54169/ijocp.v6i01.07

Abstract

Acid violence is a brutal form of gender-based violence. It has devastating and long-term effects on the survivors' physical and psychological health. The physical trauma experienced by survivors has been widely studied, but psychological challenges and coping strategies that help with healing have not received much attention. This integrative review aimed to synthesize evidence on the factors affecting mental health, the psychological impacts, and the coping strategies among acid attack survivors. A comprehensive search was conducted across PubMed, CINAHL, Google Scholar, Scopus, PsycINFO, and manual searches of NGO reports and reference lists. Out of 160 identified articles, 08 met the inclusion criteria. The result was analyzed through thematic categorization and integrative synthesis. The mental health of survivors was influenced by six interrelated factors such as disfigurement and physical injury, social stigma and discrimination, economic instability, etc. They experienced significant emotional distress, cognitive distortions, behavioral changes and psychosomatic symptoms. Coping strategies ranged from maladaptive avoidance to adaptive approaches. Social support from families, peers, and NGOs serves as pillars that infuse resilience and reintegration in survivors. To promote resilience, healing, and post-traumatic growth in survivors, we need to strengthen institutional responses, encourage adaptive coping, and improve support networks.

INTRODUCTION

Acid attack, which is also known as acid violence or vitriolage, has emerged as one of the most heinous forms of interpersonal violence. It reflects deep-rooted gender inequality, social injustice, and human rights violations (Sharmin *et al.*, 2020). It involves the intentional throwing or pouring of corrosive substances on the victim. Most used substances for this purpose are sulfuric acid, hydrochloric acid, or nitric acid (Biswas & Chatterjee, 2021). The primary intent of this atrocious crime is to inflict permanent disfigurement, disability, or psychological suffering rather than immediate death (National Commission of India, 2009). It has long-term psychological impact through visible disfigurement, social isolation, and emotional trauma (Karunadasa *et al.*, 2010). This

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crime thus reflects a distinct intersection of physical brutality and psychological oppression.

Although acid attacks occur globally, including South Asia, the Middle East, Africa, and parts of Europe and America (Byard, 2020). But its prevalence is predominantly concentrated in low and middle-income countries, particularly Bangladesh, India, Pakistan, and Cambodia (Kalantry, 2011). Over 3500 people, mainly children and women, have been attacked since 1999 in Bangladesh (Razzaque, N., 2023). In India, acid attacks remain a serious problem, regardless of a gradual decline in the reported cases. The incidence decreased from 244 cases in 2017 to 176 in 2021 (National Commission for Women, 2025). The National Crime Records Bureau (NCRB, 2022) reported 124 incidents in 2022, affecting around 140 victims. West Bengal, Uttar Pradesh, and Madhya Pradesh reported the highest number of these cases. Metropolitan cities also don't remain unaffected. Bengaluru records the highest number of cases, followed by Delhi and Ahmedabad in urban cities (NCRB, 2022). According to experts, there is a high number of underreporting of these cases in rural areas. This is particularly due to associated societal stigma, fear of retaliation, and lack of access to the justice system in rural settings (Kumar V, 2022). The acid violence in India can be broadly associated with gender-based violence against women. The World Health Organization (2021) estimates that one in every third woman globally experiences physical and/or sexual assault during their lifetime. It shows that societal inequalities and patriarchal systems continue to encourage such crimes to occur, which is very shameful and disheartening.

Although significant reforms have been made in India, such as the Criminal Law (Amendment) Act (2013), which has made acid attack a separate, non-bailable offence and mandated restrictions on the sale of corrosive substances (Bajpai *et al.*, 2015). Despite these reforms, implementation challenges and gaps in the survivor support system persist.

The motives behind acid attacks are complex and rooted in socio-cultural dynamics. Some of the most common reported reasons for this wicked crime are marriage proposal rejection, refusal of sexual advances, domestic conflicts, dowry disputes, extramarital relationships and property-related

issues (Ramesh Dey & Ors. v. State of West Bengal, 2007; Kumar V, 2022). In Pakistan, acid attacks are a gender-based violence used to punish women for exercising agency over marriage, education, or employment (Sarfraz *et al.*, 2022). In Western contexts, such as the United Kingdom, acid violence is mainly associated with gang rivalries, robberies, and other forms of organized crime rather than primarily gender-based violence (Home Office, 2021). These regional variations highlight the importance of studying acid violence with socio-cultural and economic aspects. According to Sonal (2023), men use acid violence to show their supremacy and masculinity by destroying the beauty of a woman by attacking their face. Therefore, these acts are not just interpersonal but also symbolic, with the intention of ensuring that women remain in a subordinate position to men.

Acid attacks have terrible multidimensional consequences. It impacts the victim physically, socially, emotionally and psychologically. Physically, survivors endure chronic pain, permanent disability, disfigurement, loss of vision, restricted mobility and recurrent infections. Many survivors undergo dozens of reconstructive surgeries and multiple skin grafts, which leads to prolonged hospitalisation and life-long medical care (Karunadasa *et al.*, 2010; Kumar V, 2022). Socially, the visible disfigurement often leads to social stigma, marital breakdown, disrupted education, and loss of job and employment opportunities (Razzaque, N., 2023). It severely impacts the emotional and psychological well-being of a person.

Acid attack victims have profound psychological consequences. Survivors frequently experience depression, anxiety disorders, insomnia, body image disturbances, suicidal ideation, and post-traumatic stress disorder (PTSD), with prevalence estimates of PTSD among survivors ranging from 33–36% (Sharmin *et al.*, 2020; Zaman *et al.*, 2023; Walsh, 2012). Studies from Bangladesh and Pakistan suggest that more than one-third of survivors experience clinically significant anxiety, depression, or PTSD (Sharmin *et al.*, 2020; Sarfraz *et al.*, 2022). Face is the primary marker of identity and beauty. Acid violence deliberately targets the face, which adds to the trauma and suffering, as now the survivor needs to deal with impaired body image, social isolation,

and judgments from others. Many women experienced broken marriages and abandonment by their spouses (Jain *et al.*, 2025). As a result of stigma and feelings of unworthiness, survivors avoid social interactions and suffer deteriorating relationships with friends and family. They also suffer loss of employment and economic dependency (Amber-*een & You saf*, 2023).

Despite these challenges, survivors demonstrate an exceptional amount of resilience through various coping mechanisms. Coping strategies may vary across cultures, religions and societal contexts. Emotion-focused strategies such as prayer, meditation and seeking spiritual comfort are common in the South Asia region (Jain *et al.*, 2025; Lokman *et al.*, 2023). Many demonstrate problem-focused coping, in which they channel their trauma into advocacy and community engagement and engage in activities such as pursuing education, legal justice and social activism (Bato ol *et al.*, 2022). In Iran, studies have highlighted the importance of multi-level recovery frameworks that integrate personal resilience, family support, and institutional resources to aid rehabilitation (Khoshnami *et al.*, 2017). It has been evident that rehabilitation programs such as psychological counselling, vocational training, and social reintegration have significantly improved survivors' self-efficacy, helped them change maladaptive coping, and fostered adaptive psychological frameworks (Jain *et al.*, 2025).

Nevertheless, the existing body of literature has mainly focused on medical management, surgical reconstruction, and legal frameworks. At the same time, there are very few studies that have systematically examined the psychosocial dimensions and mental health dimensions of acid violence. The research work on topics like long-term psychological impact and coping strategies used by survivors is mainly fragmented and underexplored. There is a need to explore and integrate these findings to create better survivor-centred interventions. Therefore, this integrative review aims to explore the factors affecting mental health, psychological impacts, and coping strategies among acid attack survivors. This review integrates evidence from diverse methodologies and contexts, and offers a holistic, survivor-centred perspective (Whittemore &

Knaf l, 2005). This review seeks to highlight not only challenges faced by survivors but also the resilience and coping mechanisms that enable recovery. The evidence generated will be valuable for healthcare professionals, policymakers, and non-governmental organisations who are working towards the prevention of acid violence, survivor empowerment, and comprehensive rehabilitation.

AIM

This integrative review aimed to synthesize evidence on the factors affecting mental health, the psychological impacts, and the coping strategies among acid attack survivors.

METHODOLOGY

An integrative review and synthesis of the literature was conducted to combine the findings of different studies. This review provides a comprehensive interpretation by combining and summarizing the results of previous primary research studies. This approach was chosen due to its capacity to integrate findings from diverse study designs and contextual backgrounds, particularly given the qualitative depth and interdisciplinary nature of the topic. This study utilized an integrative review methodology to synthesize and critically interpret existing literature on acid attack survivors. The review aimed to identify key determinants of psychological distress and psychological impact and to explore coping strategies employed by survivors.

Data Sources and Search Strategy

A systematic search was conducted using major academic databases, including PubMed, CINAHL, Google Scholar, Scopus, and PsycINFO. To find studies that specifically focused on acid attack survivors. The search included the following key terms (alone and in combination): acid attack, acid attack survivors, acid violence, vitriolage, vitriolism, psychological impact, mental health, psychological challenges, Psychological Health, psychological effect, and Coping. Boolean operators (AND, OR) were used to refine the search. And additional literature was identified through manual searches of reference lists and relevant reports published by

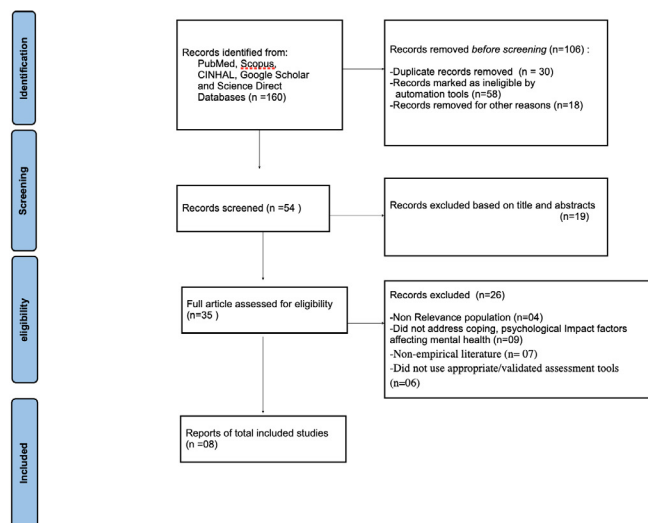


Fig. 1: PRISMA flow diagram

nongovernmental organizations (NGOs). Eligible studies were evidence-based articles that were published in English, with full-text availability, and published between 2016 and 2025. In the initial search, a total of 160 articles were found. 54 studies were shortlisted after applying predefined inclusion and exclusion criteria. After the abstract screening, 35 articles remained. Eventually, after reading the full texts, 08 articles were included in the final integrative review based on the quality of the studies. These selected studies were thoroughly analyzed and synthesized.

Inclusion and exclusion process

The inclusion criteria for this review were studies published in English between 2016 and 2025. The population includes acid attack survivors of any age or gender. Only full-text articles with clear methodological descriptions were included. Studies aligned with the aim of this integrative review, which is to synthesize evidence of contributing factors to mental health, psychological outcomes, and coping strategies among acid attack survivors, were retained. Studies meeting all the inclusion criteria were retained. Studies were excluded if they focused on general burn victims or survivors of other forms of violence without specific reference to acid attacks, lacked methodological clarity, or were available only as abstracts without full-text access. The final

integrative review contained 08 articles (PRISMA flow diagram; Fig. 1).

ANALYSIS AND RESULTS

A full-text review was conducted for every potentially eligible study that satisfied the inclusion criteria. The selected articles were systematically read, reviewed, and compared as part of a content analysis strategy. A thorough integrative synthesis was done for all the selected qualitative and quantitative studies to develop an in-depth understanding of the contributing factors to psychological distress, psychological impacts, and coping mechanisms among acid attack survivors. A literature review is summarized in Table 1. The iterative synthesis and constant comparison approach, with the aim of this integrative review, was used to develop themes. For final inclusion, only themes that achieved consensus from all investigators were kept. Findings are categorized into three main domains, including factors affecting mental health, psychological impacts, and facilitators of coping.

Factors affecting the mental health of Acid Attack Survivors

The mental health of acid attack survivors is shaped by a complex web of interrelated factors that are beyond physical trauma. Survivors' mental health outcomes are influenced by a number of contributing factors, including physical factors, social factors, economic factors, legal and Justice factors, family-related factors, media and cultural factors.

Physical Factors

Survivors of acid attacks experience psychological distress mostly due to physical challenges. It was identified that the severity, extent, visibility, and anatomical location of burn injuries, particularly facial burns, have a significant impact on survivors' mental health (Khoshnami *et al.*, 2017). The concept of embodiment, which explains that a woman's identity is not separate from her body and emphasizes facial disfigurement resulting in loss of their identity (Mittal Shalini *et al.*, 2021). Prolonged medical and surgical treatment, functional limitations, and chronic pain all contribute to psychological discom-

fort by lowering quality of life and making daily tasks more difficult. The cumulative impact of physical deformity and chronic suffering on survivors' emotional and psychosocial consequences was also highlighted by Ambereen *et al.* (2023).

Social Factors

Discrimination and social stigma emerged as dominant themes affecting the mental health of survivors in almost all the reviewed studies. Most of the survivors experienced victim-blaming, social rejection, public humiliation, body shaming, and emotional abuse from relatives and neighbors that resulted in social isolation and a loss of identity (Khattar *et al.*, 2022; Athar *et al.*, 2020). Survivors' psychological load was further exacerbated by societal pressure to seek revenge from the perpetrator and incidents of misconduct by the community. The trauma of seeing pity or disgust in other people's expressions was a recurring source of emotional distress. Survivors frequently experience discrimination and face mockery because of their facial appearance, which contributes to psychological trauma (Ambereen *et al.*, 2023). An extensive lack of both instrumental and emotional social support was also noted (Mittal *et al.*, 2021). Similarly, a lack of support by the societal system and ignorance to acknowledge the survivors' needs were identified (Khoshnami *et al.*, 2017). All these described factors further intensify the feelings of abandonment and invisibility in society among survivors.

Economic Factors

Many survivors suffered a significant loss of livelihood after the attack. High medical expenses of treatment, survivors' inability to work, and limited employment opportunities were due to appearance-based discrimination, which placed survivors under additional financial burden (Ambereen *et al.*, 2023). Loss of employment was a recurrent finding across nearly all reviewed articles. Survivors' sense of autonomy and self-worth was diminished due to their economic dependency on family members or others. Visible scarring, discrimination, and persistent social stigma create barriers for survivors to re-enter education or the workforce, further limiting opportunities for recovery and reintegration for survivors. Delays in receiving medical compensa-

tion further compound these economic challenges (Mittal *et al.*, 2020; Khoshnami *et al.*, 2017; Khattar *et al.*, 2022).

Legal and Justice-related Factors

Legal challenges significantly exacerbate the psychological distress of acid attack survivors. Fear, abandonment, and revictimization are intensifying due to a lack of institutional support, delayed justice, and inadequate punishment and fines for offenders (Khoshnami *et al.*, 2017; Khattar *et al.*, 2022). Survivors feel unsafe and erode their faith in justice because of the lengthy court proceedings and lenient punishments. Emotional trauma is made worse as some of the survivors report police misbehavior and a lack of government support. Most of the survivors are not aware of their legal rights, protection rights, and compensation programs because of a lack of informative social assistance, which limits their access to justice and recovery (Mittal *et al.*, 2020; Mittal *et al.*, 2021).

Family-related Factors

Family dynamics play a very important role in the recovery of survivors; it can be both a source of support and distress. While some survivors explain emotional and financial support they receive from family as others report experiences of neglect, overprotection, shame, and low family support and care (Athar *et al.*, 2020; Azim *et al.*, 2023). Isolation and psychological suffering are exacerbated for some survivors by intimate partner abandonment or disrupted marriages, which further contribute to isolation and psychological distress. Incidents of psychological assault by family and relatives, patterns of emotional abuse, gender-based discrimination, and victim-blaming within households are emphasized by some studies (Athar *et al.*, 2020; Mittal *et al.*, 2020; Mittal *et al.*, 2021). Similarly, some families directly blamed survivors for the attack, which further compounds their emotional trauma (Khoshnami *et al.*, 2017).

Media and Cultural Factors

Survivors' psychological experiences are significantly influenced by cultural norms and media portrayals. Sensationalized media coverage, which focuses on physical appearance that enhances the psycholog-

Table 1: Review Table of the selected studies

<i>Author, Year, Place/Country</i>	<i>Methodology (Study design, sample, tools, setting,)</i>	<i>Factors affecting mental health</i>
Mohammad Sabzi Khoshnami et al., 2017; Iran	Study design: Qualitative, grounded theory Sample: Acid attack survivors, 6 women and 6 men (n= 12) Sampling technique: Purposive sampling Data collection tools-Semi-structural interview, field notes Setting: Shahid Mottahari Accident and Burn Injury Hospital, Iran	Extent and location of burns, victims blaming for the acid attack, obstacles in getting a job, and being pitied, abandoned by government and non-governmental institute, lack of judicial justice, lack of sympathy and Commitment by medical team, lack of support by the societal system, unfair laws on punishment (only fines and some years in prison), unfair judgements and unequal opportunity for revenge
Unsa Athar et al., 2020; Pakistan	Study design: Qualitative, observational study Sample: Female Acid attack survivors (n=3) Sampling technique: NA Data collection tools- In-depth interview with observations Setting: Mayo hospitals, Lahore, Pakistan	Psychological assault from the relatives and neighbors, Seeing the pity or disgust in people's eyes and body shaming
Mittal Shalini et al.,2020; India	Study design: Qualitative, narrative research Sample: Female acid attack victims (n=30) Sampling technique: NA Data collection tools: Narratives Setting: Cafe (managed by the acid attack victims), Uttar Pradesh, India	No family and friends support, Loss of job, Forced school/college dropout, lack of informational social support,(not well versed about rights, law, legal procedures, victim compensation programs), Lack of instrumental social support (providing help), marital disruption, stigma, blame the victims for causing disruption of family and marital life.
Mittal Shalini et al., 2021; India	Study design: Qualitative study Sample: Female Acid attack survivors (n=30) Sampling technique: Purposive sampling Data collection tools: Narratives Setting: Cafe (managed by the acid attack victims), Uttar Pradesh, India	Re-victimization by family, Violence & emotional abuse, gender-based violence, Disfigurement of the face, loss of jobs, Betrayal trauma, Violation of civil rights, Embodiment (an idea that a woman's identity is not separate from her body form)
Khattar Shivangi et al. 2022; India	Study design: Qualitative Sample: Female Acid attack survivors (n=11) Sampling technique: Purposive sampling Data collection tools: Structured interviews Setting: conducted online via Zoom	Negative societal perceptions, lack of empathy, rejection from employment, pressure to seek revenge from perpetrators, lengthy legal proceedings, delayed government compensation, medical expenses, misconduct by police personnel, Lack of support from government organizations and society, experience 'secondary victimization' by the system.

Cont...

Psychological impact

Coping strategies

Dissatisfaction with appearance, feeling of being victimized, feeling unsafe, severe irritation, Hopelessness, helplessness, social deprivation, committing suicide, ambiguity of life plans, trouble in parenting duties, social isolation

Avoidance, acceptance, self-restoration, belief in personal independence in life, ignoring, control over themselves and their environment, obtaining higher education, economical independence, autonomy in life, personal active strategies, spending leisure time, using effective interactional skills, leaving previous living environment. seeking more information to better cope with the problem, Family support, Friends' assistance, support by people who have similar problems.

Depressed, Inferiority Complex, Anger, social stigmatization, social withdrawal, self-blame which led to further social isolation

Formal social support by hospital, Government And NGO. Informal emotional, moral, financial and social support by parents, children, and siblings

Social isolation, social withdrawal, disengagement, social exclusion, stigmatization, psychological distress

Support from family, friends and community, instrumental social support, emotional and moral support, informational social support from NGO, acceptance in the society, support received from the community

Loss of self-identity,
Loss of social relations

Feelings of isolation, shame, embarrassment, fear, worthlessness, distress, suicidal ideation, low self-concept, internalized victimhood, dysfunctional thoughts and perceptions, negative self-perception

Individual and group counselling sessions, physical activities, Meditation, being part of an NGO, gaining financial independence, having faith, will power, working on identity formation, moving on from the past. Motivation and inspiration from the stories of strength of other survivors.

Cont...

Hadia Batool et al., 2022; Pakistan	<p>Study design: Qualitative Design Sample: Women survivors of acid violence (n=15) Sampling technique: Snowball sampling Data collection tools: semi structured interview Setting: Pakistan</p>	
Beenish Ambereen et al., 2023; Pakistan	<p>Study design: Qualitative design, phenomenological approach Sample: Female Acid attack survivors (n=25) Sampling technique: Purposive sampling Data collection tools- In-depth interview Setting: University of Punjab, Lahore, Pakistan</p>	<p>Physical injuries and damages, severe bodily disfigurement, pain, cost of treatment, social exclusion, face discrimination and mockery based on their appearance, survivor were blamed for the attack, social and economic marginalization, no empowerment opportunities and jobs</p>
Sidra Azim et al., 2023; Pakistan	<p>Study design: Qualitative, Thematic approach Sample: Acid attack survivors, 11 females and 4 transgenders (n=15) Sampling technique: Purposive sampling Data collection tools: Semi structured interviews Setting: Depilex Smile Again Foundation, Lahore.</p>	<p>Lack of family or social support, challenges victims faced after injuries, felt burden on others,</p>

ical suffering of survivors, and cultural norms that link a woman's worth and value with beauty and marriage, are also the source of distress. Survivors may internalize cultural narratives of shame, which reinforce feelings of worthlessness and despair (Mittal Shalini *et al.*, 2021).

Psychological Impact of Acid Attack Survivors

Acid violence has a severe and long-lasting psychological impact on the survivors. Emotional, cognitive, behavioral, trauma-related, and psychosomatic symptoms interact in a complicated way for survivors. Thematic classification provides an integrated view of the psychological symptoms seen in all the examined research, as follows:

Emotional Symptoms

Survivors described a variety of strong emotional symptoms caused by the trauma. Most of the studies

have shown common symptoms of chronic mental discomfort, such as anxiety, depression, hopelessness, helplessness, loneliness, shame, embarrassment, fear, and feelings of worthlessness (Khattar *et al.*, 2022; Azim *et al.*, 2023; Ambereen *et al.*, 2023). Suicidal thoughts and emotional withdrawal are common in several stories about the impact of social rejection and permanent disfigurement (Sidra Azim *et al.*, 2023; Khoshnami *et al.*, 2017). Unsa *et al.* (2020) identified that survivors feel angry, guilty, and emotionally damaged because of the negative feedback of society and societal shaming & blaming of victims.

Cognitive Symptoms

Cognitive distortions like low self-esteem, internalized stigma, negative body image, feelings of inferiority, and distorted self-perception, self-blame due to loss of previous identity are very common among survivors (Mittal *et al.*, 2020; Unsa *et al.*, 2020). Khattar *et al.* (2022) and Khoshnami *et al.* (2017) state

Social isolation

Problem solving coping strategies, Emotion-focused coping strategies, Constructive coping, Nonconstructive coping, Spiritual-religious coping

Depression, persistent fear of future attacks, chronic anxiety, low self-esteem, emotional scars, social exclusion, self-isolation

Empowerment, education, vocational training and self-entrepreneurship

Suicidal ideation, Depression, Hopelessness, Helplessness, Loneliness, feelings of inadequacy, Low Self Esteem, Self-hatred, Worthlessness, Perceived Stigma, posttraumatic stress disorder

Religious coping, Problem focused coping, Emotion focused coping

that survivors experience negative self-perception and concepts, dysfunctional thoughts & perceptions, uncertain self-identity, and reduced sense of social value. Ambereen *et al.* (2023) identified persistent rumination, difficulties in concentration, and intrusive thoughts. And survivors frequently reported a lost sense of future orientation because of their ambiguous thoughts. Survivors often show feelings of inadequacy, self-hatred, diminished self-esteem, shame, and disturbed body image after the trauma because of body disfigurement (Sidra Azim *et al.*, 2023).

Behavioral Symptoms

Behavioral changes such as social withdrawal, isolation, social exclusion, avoidance of public places, reluctance to face mirrors, and absence from work, education, or social activities are seen in survivors (Batool *et al.*, 2022; Khattar *et al.*, 2022; Unsa *et al.*, 2020). Some survivors exhibit dependency, passivity,

or hyper-independence due to the lack of institutional or family support (Mittal *et al.*, 2020). Due to fear of judgment, survivors frequently choose to distance themselves from society. Khoshnami *et al.* (2017) identified that some of the survivors chose maladaptive defensive mechanisms for coping, such as aggressive or irritable behavior. Some of the survivors developed a strong will to regain their personal autonomy and identity.

Post-Traumatic Stress Symptoms (PTSS)

Post-traumatic stress disorder (PTSD) symptoms are frequently persistent among survivors. Survivors' experiences include flashbacks, nightmares, hypervigilance, panic attacks, self-destructive behavior, and emotional numbing (Azim *et al.*, 2023). Memories related to the trauma are often reactivated by survivors' involvement in legal proceedings and social interactions related to the incident and media coverage. Khattar *et al.* (2022) highlighted that sur-

vivors have a constant fear of recurrence with other symptoms such as sleep disturbances, avoidant behaviors, and exaggerated startle responses, and these symptoms further reflect features of PTSS.

Psychosomatic Symptoms

According to several studies, survivors report somatic symptoms without identifiable physiological causes, which indicate psychosomatic disorders. Khattar *et al.* (2022) highlight the complex interconnection between mental and physical health in the recovery period, which includes dysfunctional thoughts and perceptions exacerbating psychological and somatic symptoms among survivors. Khoshnami *et al.* (2017) identified common complaints of survivors such as chronic fatigue, headaches, gastrointestinal issues, and generalized body pain; these symptoms tend to intensify during an emotional distress period. Because of these physical manifestations, survivors' capacity to reintegrate into normal daily functioning further decreases.

Coping Strategies Among Acid Attack Survivors

Acid attack survivors adopt a range of coping strategies to manage psychological trauma. These mechanisms depend on several factors, including individual resilience, the availability of a support system, cultural & religious background, and the severity of the damage.

Adaptive coping strategies

Survivors demonstrate problem-focused coping, managing stress with conscious efforts by seeking help & justice and accepting medical treatment. Some survivors regain financial independence, reconstruct their self-identities and rebuild their lives through education, vocational training, or small businesses (Ambereen *et al.*, 2023; Khattar *et al.*, 2022). Participation in NGOs and community-based initiatives such as survivor-run cafes also reflects proactive adaptive coping (Mittal *et al.*, 2021). Khoshnami *et al.* (2017) report that some of the survivors pursue legal action, change their living environment, or seek higher education as part of long-term recovery. Batool (2020) identified some additional coping strategies, such as seeking support, accepting their new identities with confidence, and using more practical approaches like covering scars to

avoid alien eyes. Khattar *et al.* (2022) and Azim *et al.* (2023) highlight emotion-focused coping techniques such as meditation, willpower strengthening, spiritual or religious practices, counseling, and emotional expression through talking or journaling. Faith and spirituality were especially prevalent; survivors believed that faith in God helps them to begin a new life by providing a sense of meaning and hope. Batool *et al.* (2022) identified techniques such as expressing emotions and receiving emotional support from family members as also playing an important role in helping survivors manage stress.

Positive empowerment and meaningful activities help survivors to reconstruct a sense of purpose and identity in their lives, and these activities help acid attack individuals in transition from victims to survivors, such as storytelling, peer group discussions, and participation in awareness campaigns. Several survivors report that working with NGOs or helping others provided them with new hope for the future and reinforcement in their lives (Khattar *et al.*, 2022; Ambereen *et al.*, 2023).

To regain psychological control, cognitive coping strategies are used to reinterpret or reframe traumatic experiences. Batool *et al.* (2020) also identified positive cognitive restructuring as a key strategy used by survivors, including affirmations such as "looks don't matter," "I am better than others." Strategies such as engaging in positive self-talk, self-acceptance, and self-reflection can help regain mental control. Khoshnami *et al.* (2017) observed that to regain their autonomy, self-esteem, and self-worth, survivors consciously focused on building personal independence, mental strength, and rational reframing.

Supportive social networks, including family, friends, relatives, NGOs, hospitals, government institutions, and the community, are among the most important predictors of survivor recovery. Group counseling, peer support, and financial, emotional, and moral support from family and friends are beneficial for the survivors (Athar *et al.*, 2020). Acceptance & reintegration into society, as well as access to education or employment, are further factors that promote the psychological healing of survivors. The Acid Survivors Foundation, run by NGOs, plays a crucial role in providing a safe space for peer

interactions, therapy, and skills training. Khattar *et al.* (2022) highlighted that hearing other survivors' inspirational tales of resilience and strength served as powerful sources of motivation and hope. Mittal *et al.* (2020) discussed two key types of support, both of which are significant in the recovery process: informational support, such as legal rights, procedures, and compensation, and instrumental support, which includes societal help and acceptance.

Maladaptive coping strategies

Reviewed studies identified that some survivors use maladaptive coping strategies, including substance use, social withdrawal, emotional suppression, avoidance, ignorance, and social detachment. Forms of avoidance, such as avoiding mirrors or public spaces, emerge as short-term defense mechanisms frequently adopted to manage distress. These coping behaviors offer temporary relief from distress and can hinder psychological recovery and increase the risk of chronic mental health challenges. (Mittal *et al.*, 2020; Athar *et al.*, 2020). Batool *et al.* (2022) further identified cognitive avoidance strategies, such as distraction, pretending to be happy, and accepting trauma as fate. Collectively, these maladaptive strategies not only delay psychological recovery but also increase vulnerability to long-term conditions, including depression, anxiety, and post-traumatic stress. Khoshnami *et al.* (2017) also observed isolation among survivors, prolonged isolation further exacerbating feelings of hopelessness and vulnerability.

DISCUSSION

This review aimed to synthesize the profound psychological impact of acid attacks and highlight the complex interplay between factors affecting psychological well-being and coping strategies that help the survivors in resilience. Survivors' psychological trauma does not only arise from physical trauma, but also from interrelated factors that are physical factors, social stigma, economic vulnerability, legal neglect, family dynamics, and media-cultural influence. Physical disfigurement and damage, extent and location of burns, particularly facial burns, lead to loss of identity and diminished self-worth (Ambereen *et al.*, 2023; Khoshnami *et al.*, 2017).

Prolonged treatment, functional limitations and chronic pain all contribute to psychological discomfort identified by Ambereen *et al.* (2023). Similar findings identified by Yousaf & Purkayastha (2016) and Mujeeb and Kamal (2018), that the inability of the survivors to return to pre-attack physical states is a deep psychological suffering, and facial disfigurement is strongly associated with body image disturbances.

Social stigma, including societal rejection, discrimination, judgment and body shaming, further contributes to anxiety, shame, and isolation (Ambereen *et al.*, 2023; Athar *et al.*, 2020; Bajpai, 2015; Jabeen *et al.*, 2020; Khoshnami *et al.*, 2017; Mittal, 2020). Survivors frequently experience "secondary victimization" through systemic neglect and societal rejection (Khattar *et al.*, 2022). Similarly, Hameed *et al.* (2022) identified victim-blaming as the dominant contributor to psychological distress in the survivors. Economic dependence and unemployment of survivors, often exacerbated by impaired vision or disability, hinder survivors' ability to meet basic needs and regain autonomy, in line with Maslow's hierarchy of needs (1943). Loss of employment and financial dependence greatly affect survivors' autonomy. Compensation delays and lack of institutional support further deteriorate the situation. (Khoshnami *et al.*, 2017; Khattar *et al.*, 2022; Mittal, 2020). Legal challenges, including delayed justice, lengthy legal proceedings, unfair judgments, and delayed government compensation, further traumatize victims and lead to a feeling of hopelessness, disempowerment, and often worsening post-traumatic stress disorder (Herman, 1992; Khattar *et al.*, 2022; Khoshnami *et al.*, 2017). Psychological support within the family is vital. Family responses vary widely, from providing strong emotional support to rejection, control, or abuse (Azim *et al.*, 2023; Hameed, 2022; Jabeen *et al.*, 2020; Khoshnami *et al.*, 2017; Mittal *et al.*, 2021). Cultural norms and media narratives that link women's worth with beauty and marital status further deepen feelings of rejection and despair (Mittal *et al.*, 2021; Niaz, 2003).

The review also documented behavioral, emotional, psychosomatic, and trauma-related outcomes, including anxiety, depression, hopelessness, helplessness, guilt, despair, social isolation, social exclusion and suicidal ideation (Athar *et al.*, 2020;

Haroon *et al.*, 2021; Mittal *et al.*, 2021). Isolation has been positively associated with suicidal ideation (Qazi *et al.*, 2019), while lowered self-esteem and self-consciousness are common (Bajpai *et al.*, 2015). Similarly, Hameed *et al.* (2022) reported moderate depression, diminished self-acceptance, and reduced psychological well-being, marked by guilt, hopelessness, worthlessness, and suicidal ideation. Similar findings, such as sadness, nervousness, and low self-esteem, were reported by Dutta *et al.* (2022). Survivors often develop cognitive distortions, including internalized stigma, negative self-perception and diminished self-worth (Azim *et al.*, 2023; Khattar *et al.*, 2022). Some studies have noted that even after physical recovery, survivors struggle to resume their normal lives (Ambreen *et al.*, 2003; Azim *et al.*, 2003). Psychosomatic symptoms are also prevalent in this population (Azim *et al.*, 2003). Similarly, Van der Kolk (2014) suggests that unresolved trauma often manifests physically, especially in survivors of interpersonal violence. Post-traumatic stress disorder (PTSD) symptoms are frequently persistent among survivors (Azim *et al.*, 2023). Similarly, Dutta *et al.* (2022) highlighted PTSD symptoms such as nightmares, hypervigilance, emotional numbing, and the need for long-term psychological interventions to tackle PTSD.

Survivors employ both adaptive and maladaptive coping strategies. Emotion-focused and cognitive approaches, such as reframing, journaling, and spiritual practices, are commonly used, while avoidant coping predominates in early trauma stages. However, prolonged avoidance exacerbates emotional numbing and hopelessness (Athar *et al.*, 2020; Khoshnami *et al.*, 2017; Moos & Holahan, 2003). Some survivors transform their experiences through positive reinforcing coping into advocacy, storytelling, and peer mentorship, which foster resilience and reintegration. Community initiatives, such as NGO-run campaigns, survivor-run cafes, and survivor-led programs, provide a sense of control and collective healing. Social support from family, peers, NGOs, and community networks serves as a key protective factor, reducing isolation and facilitating recovery (Lokman *et al.*, 2023; Mittal *et al.*, 2021). Another aspect that can be addressed as significant in determining survivors' responses to trauma to

facilitate the recovery and rehabilitation is psychological makeup; it can be adaptive or maladaptive. Adaptive elements, such as a positive life orientation, self-efficacy, and a belief in the world, promote recovery, whereas maladaptive elements, including cognitive distortions, shame, and hopelessness, intensify distress (Mittal, 2020). Survivors affiliated with NGOs reported rehabilitation benefits that helped them to reintegrate into society (Hameed, 2022). Similarly, Malik (2024) reports that broader systemic reforms, including an Adequate Health Care System, speedy legal trials, stronger regulatory Authorities, and school-based awareness programs, are critical for facilitating psychological rehabilitation and resilience among acid attack survivors.

Strengths

This article offers a significant contribution in underexplored areas by focusing on the factors affecting mental health, psychological impacts, and coping strategies of acid attack survivors. This area is limitedly explored in health literature. Importantly, the findings have strong clinical relevance, guiding the development of trauma-informed and resilience-building nursing interventions that can directly improve care delivery. By highlighting this marginalized group, this article fills a significant gap in the health and nursing literature. The article provides a more comprehensive understanding of survivors' lived experiences and the complexity of trauma recovery. These implications extend beyond theory, offering practical strategies to improve the quality of care and psychosocial rehabilitation for survivors. Furthermore, by incorporating evidence from multiple studies, the article enhances its credibility and ensures that conclusions are grounded in diverse survivor experiences across contexts. By identifying both effective and harmful coping patterns, it provides a solid foundation for developing interventions, advocacy programs, and supportive policies that promote long-term psychological healing and social reintegration.

Limitations

Some limitations need to be acknowledged. The findings may be influenced by cultural and social contexts, which could restrict their generalizability



to other populations. Reliance on a limited pool of studies and the possibility of underreporting sensitive psychological experiences due to stigma may have affected the comprehensiveness of results. Moreover, the lack of longitudinal evidence limits understanding of how coping strategies evolve throughout survivors' recovery journeys.

Recommendations

Based on the strengths and limitations identified, several recommendations are proposed. Nursing practice should prioritize trauma-informed, culturally sensitive care that incorporates psychoeducation, mindfulness, and resilience-building strategies. Policy frameworks must ensure that psychological support and social reintegration are central components of rehabilitation services for survivors. Future research should employ longitudinal designs, explore caregiver coping alongside survivor experiences, and develop nursing-led interventions aimed at enhancing adaptive coping while addressing maladaptive responses.

CONCLUSION

Acid attacks not only cause devastating physical harm but leave psychological scars that affect nearly every element of a survivor's life. This integrative review reveals that the psychological impact is very complex, which involves emotional, cognitive, behavioral, post-traumatic, and psychosomatic symptoms. Survivors often deal with depression, anxiety, low self-esteem, suicidal ideation, and social withdrawal. And these symptoms persist long after the physical wounds have healed. Social, cultural, economic, legal, and familial circumstances all have a significant influence on the psychological well-being of survivors. Social stigmatization, delayed justice, secondary victimization by institutional systems, lack of emotional and financial support from family, and cultural norms around beauty and gender roles all contribute to the survivor's psychological suffering. Survivors show incredible resilience through a range of coping mechanisms. Emotion-focused and social coping mechanisms, such as therapy, spiritual practices, and peer support, along with problem-focused strategies like education, employment, and legal action, play important roles in psychological

recovery. This review highlights the importance of multidisciplinary and survivor-centered interventions, which encompass mental health services, legal aid, vocational training, and community reintegration programs, which are essential for early recovery and enhancing the quality of life for acid attack survivors.

RELEVANCE TO CLINICAL PRACTICE

This review emphasizes the need for integrating psychological care into the medical management of acid attack survivors. By identifying emotional, cognitive, behavioral, psychosomatic, and trauma-related symptoms as well as contributing social, legal, cultural, economic, and familial factors, it expands the existing body of knowledge. The article's findings emphasize the value of multidisciplinary care that incorporates mental health assessment and care, counseling, and family & societal support. This review supports medical care professionals in understanding the psychosocial needs of survivors and encourages the use of holistic, empathetic, and culturally sensitive care techniques to promote recovery and reintegration into society.

FUNDING INFORMATION

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Varsha Dhama: Conceptualization, Data analysis, Writing – original draft; Dhirja: Writing & Editing; Rajesh Kumar: Review & Supervision

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