

Original Research Article

Knowledge and practices related to wound care among rural adults in Aligarh, India: a cross-sectional study

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ABSTRACT

Background: Wounds are common in rural Indian communities, often due to occupational hazards and accidents. Although evidence-based acute wound care guidelines exist, local beliefs, limited resources, and low awareness often lead to traditional remedies of uncertain safety and efficacy. Proper wound care is essential to prevent infection, delayed healing, and complications. This study aimed to assess wound care knowledge and practices among rural adults in Aligarh district and examine their association with educational status.

Methods: A community-based cross-sectional study was conducted from April to June 2026 among 378 adults aged ≥18 years in a village served by the Rural Health Training Centre of J. N. Medical College, Aligarh. Participants were selected by systematic random sampling. A pretested semi-structured questionnaire assessed sociodemographic characteristics, wound care knowledge, and practices. Descriptive statistics and chi-square tests were used, with $p < 0.05$ considered significant.

Results: Of the participants, 55.3% were female and 62.2% were illiterate or educated up to primary level. Nearly half (49%) used traditional substances such as turmeric, ash, or toothpaste on wounds. Only 19.8% cleaned wounds with plain water, 19.0% with soap and water, 38% knew about tetanus prophylaxis, and 30.9% sought medical consultation within 24 hours. Higher education was significantly associated with correct wound care practices ($p < 0.001$).

Conclusions: The study shows major gaps in wound care knowledge and practices among rural adults in Aligarh, with education influencing safer practices. Community-based education and integration of WHO wound care guidance into primary healthcare are needed to improve outcomes.

Keywords: First aid, Rural population, Traditional practices, WHO guidelines, Wound care

INTRODUCTION

Wounds are one of the most frequent health concerns in rural Indian communities, often resulting from occupational hazards and accidents. While evidence-based guidelines for acute wound management are well established internationally, local beliefs and resource constraints lead many to rely on traditional remedies with variable safety and efficacy.^{1,2} According to WHO recommendations, appropriate wound care should

prioritize thorough cleansing, infection prevention, and timely medical consultation.³ Studies in rural India suggest that inappropriate applications, delayed care, and limited tetanus prophylaxis continue to thwart optimal healing and increase risks of complications.^{4,5} Documenting wound care practices and community knowledge is vital for designing effective interventions in public health. This study aims to assess knowledge and practices related to wound care among adults in a rural area of Aligarh district and to determine the association

between educational status and appropriate wound care practices.

METHODS

Study setting

RHTC is located in the Jawan block in the district of Aligarh, Uttar Pradesh, in north India. Six villages are registered under RHTC with a population of 21,000. The data for this cross-sectional study were collected in a period of 3 months, from April to June 2026.

Study design and participants

A cross-sectional study was conducted among adults (≥ 18 years) residing in a village Gadiya Bhojpur that was selected randomly by lottery method, served by Rural Health Training Centre (RHTC) of Department of Community Medicine, J. N. Medical College, Aligarh Muslim University, Aligarh. Inclusion required local residents aged 18 years, above and who were giving informed consent. Individuals with cognitive impairments and non-residents visiting temporarily and those who are not giving consent were excluded.

Sample size

The sample size was calculated using Cochran's formula. A prevalence of 50%, 95% confidence level, and 5% absolute precision were assumed. The total population of the Gadhiya Bhojpur village is 1900 resulting in a minimum required sample size about 320. The final sample size was increased to 378 to account for non-response and improve precision.

Sampling and data collection

Systematic random sampling was applied using household lists maintained at RHTC. One eligible adult was selected per household. Data collection occurred from March to June 2026 using a semi-structured, pretested questionnaire, including sociodemographic details, knowledge, and practices related to wound care.

Definition

Correct wound care practice: Wound cleaning, performed during initial assessment and regularly, aims to minimise infection risk by removing bacteria and contaminants. Sterile saline solution is preferred, while harsh agents like hydrogen peroxide should be avoided.⁶

Statistical analysis

Data was analysed by using SPSS 26.0. Descriptive statistics were used for frequencies and percentages. Chi-square tests evaluated associations between education level and wound care practices, with $p < 0.05$ considered significant.

Ethical considerations

Institutional Ethics Committee approval was obtained from J. N. Medical College, AMU (IECJNMC/2220). Informed consent was received from all participants.

RESULTS

Socio-demographic profile

Out of 378 respondents, most were female (55.3%). The Mean $\pm$ SD age of study participants was 47.9 $\pm$ 12.6 years and over 62.2% residents were either illiterate or went only to primary school. Agriculture and homemaking were prevalent occupations (Table 1).

Table 1: Socio-demographic profile of participants (n=378).

Variable	Frequency (%)
Age in years (mean)	47.9
Gender: Male	169 (44.7)
Gender: Female	209 (55.3)
Education: Illiterate and primary school	235 (62.2)
Education: secondary/higher secondary	106 (28.0)
Education: Graduate and above	37 (9.8)
Occupation: Agriculture	140 (37.0)
Occupation: Homemakers	121 (32.0)
Occupation: Daily wage labourers	68 (18.0)
Occupation: Others	49 (13.0)

Table 2: Knowledge and practices regarding wound care (n=378).

Knowledge/practice	Frequency (%)
Reported wounds should be cleaned with plain water	75 (19.8)
Reported wounds should be cleaned with soap + water	72 (19.0)
Applied traditional substances (turmeric, ash, toothpaste, oil/kerosene)	185 (49.0)
Applied antibiotic/antiseptic ointment	102 (27.0)
Covered wound with clean cloth/bandage	91 (24.0)
Aware of tetanus prophylaxis	144 (38.0)
Sought medical consultation within 24 hours	117 (30.9)

Wound care knowledge and practices

Variety of materials and methods to manage wounds were found in the survey. Knowledge about modern wound cleansing was limited, and only 19.8% were washing

wounds with water and 19.0% with soap and water. Instead, 49% reported use of traditional substances, including turmeric, ash and soil. Only 27% used antibiotic or antiseptic ointments. Awareness about tetanus prophylaxis was only 38% (Table 2).

Educational associations

Education demonstrated a clear relationship to appropriate wound management; those with secondary or higher education practiced correct methods more than twice as often as those with only primary schooling (Table 3).

Table 3: Association between education level and correct wound care practices.

Education level	Correct practice, N (%)	Incorrect practice, N (%)	P value
Illiterate/primary (n=235)	55 (23.4)	180 (76.9)	<0.001
Secondary/higher Secondary (n=106)	51 (48.1)	55 (51.9)	
Graduate and above (n=37)	21 (56.8)	16 (43.2)	

DISCUSSION

This study was conducted in a village under the RHTC, JNMC Aligarh. 378 participants were interviewed regarding their knowledge, awareness and how they manage on getting wounds. Most of the participants were women and of low literacy level. This study highlights considerable shortfalls in wound care knowledge and evidence-based practice among adults in rural Aligarh. The widespread use of traditional substances such as turmeric, ash, and toothpaste creates concern in the era of modern medicine. While some plant-based treatments may have antimicrobial properties, uncontrolled use of non-sterile agents increases risk of bacterial infection, delayed healing, and tetanus.^{7,8} These findings have substantiated in many multicentric surveys across rural part of developing countries.^{9,10}

Recent community surveys indicate that use of folk remedies for wounds remains common in rural India. One rural Karnataka study reported that 29% of farmers applied turmeric paste to wounds.¹ In Assam, a burn registry found that 80.9% of patients initially used home remedies (e.g. toothpaste, ash, etc.) on burn wounds, although this fell to 34.6% after public education campaigns.² Our results align with studies from Karnataka, Assam, and Saudi Western Region, all of which report reliance on home remedies for wound management.^{2,11,12}

The World Health Organization promotes a clear protocol for wound management. It highlights initial cleansing with clean water or saline, avoidance of irritants, timely

assessment for need of closure, and tetanus prophylaxis.³ However, in the present study, only a small proportion adhered to the water cleansing recommendation, and less than one-third sought medical attention within 24 hours. These figures are lower than those reported in some other rural contexts.¹¹

Education and awareness emerge as important determinants of appropriate wound-care practices. In the present study, a statistically significant association was observed between educational status and correct wound-care practices ($p < 0.001$). Most of the participants with higher education were aware of proper wound management. This finding is consistent with the observations of Bal et al, who identified lack of awareness among healthcare professionals and patients as an important contributor to delays in the diagnosis and management of chronic wounds in India.¹ Many participants with low literacy were either not sure of proper wound management practices or were having more faith in traditional methods of management.^{9,10}

Multiple studies show that higher education is linked to better wound-care practices. In a Sudanese household survey, 38% of injured people first consulted a traditional healer, and there was a strong negative association between education level and use of traditional care (i.e. more educated individuals were less likely to rely on folk remedies).¹¹ Similarly, the Assam burn-program evaluation noted that many rural patients initially “wasted time” using herbal or improvised treatments before seeking proper medical care.² These patterns indicate that lower literacy/education correlates with delayed or improper wound management, whereas better-educated persons tend to adopt recommended hygienic care sooner.

Investment in adult education and community training has consistently demonstrated better adherence to recommended care and improved outcomes. Targeted efforts by local health workers (ASHAs and Anganwadi workers) are supported by evidence from similar outreach initiatives.^{1,4,14}

The persistence of unsafe practices also reflects limited access to health services, supply chain barriers, and entrenched beliefs. The discrepancy observed between evidence-based recommendations and practices in our villages signals an important opportunity for public health intervention. Standardized, evidence-based approaches to infection prevention are essential for reducing preventable wound-related complications.¹⁵ Effective integration of WHO protocols at the community level requires visual demonstrations and culturally adapted education. Training of community health workers in wound assessment, safe dressing techniques, and infection recognition could be of great help.^{3,16,17} Public health efforts must prioritize awareness through visual demonstrations, local language sessions, and folk media to counter misinformation. Incorporating wound-care education into primary health programs and school

curricula would foster early behavioral change.

This study has few limitations. As a cross-sectional study based on self-reported data, the findings may be affected by recall and social desirability bias. In addition, the single-centre design may limit generalizability. Nevertheless, the results are consistent with national and international literature, suggesting that similar challenges exist across rural communities.

CONCLUSION

Rural Aligarh has a clear and urgent need for culturally appropriate, evidence-based wound care education. Educational attainment strongly shapes safe wound care practices, while the continued use of traditional substances underscores the need for targeted public health action. Integrating WHO wound management guidelines into local health services and community outreach programmes is essential to reduce complications and improve health outcomes.

Recommendations

Strengthening frontline healthcare capacity and enhancing community awareness may substantially reduce wound-related infections and complications in rural settings. ASHAs, community nurses, and Anganwadi workers should be trained in evidence-based wound care and first aid. Community-based training modules on basic wound first aid should be developed, and awareness campaigns should be conducted through local health workers and schools. Furthermore, rural health centres should be equipped with a reliable supply of antiseptics and tetanus prophylaxis to ensure timely and appropriate wound management.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee, J. N. Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh, India (IECJNMC/2220)

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