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The Effectiveness of Community-Based Food Safety Education in Preventing Foodborne Illnesses

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ABSTRACT: Community-based food safety education aims to reduce foodborne illness by improving how ordinary households and local food handlers—rather than professional kitchens alone—handle, store, and prepare food. The rationale is straightforward: a large share of reported outbreaks traces back to domestic kitchens, street vendors, and small local establishments where formal regulatory oversight is thin. Programs typically combine

workshops, home visits, mass media campaigns, and peer-led training sessions delivered through health centers, schools, churches, and community organizations. The appeal of this approach lies in its accessibility and cultural fit: messages can be adapted to local food practices, literacy levels, and languages, and trusted community figures can serve as credible messengers in ways that distant health authorities often cannot. Evidence on effectiveness is encouraging but uneven. Studies from a range of settings report measurable gains in knowledge and self-reported behavior—better handwashing, safer storage temperatures, more consistent separation of raw and cooked foods, and improved understanding of high-risk foods for pregnant women, infants, and the elderly. Some interventions have shown reductions in diarrheal illness incidence, particularly where education was paired with practical supports like low-cost thermometers, safe water containers, or improved market infrastructure. However, the field faces persistent limitations: reliance on self-reported behavior rather than observed practice, short follow-up periods, difficulty sustaining gains after program funding ends, and the challenge of attributing illness reduction to education alone when sanitation, water supply, and food availability also shape risk. The most defensible conclusion is that community-based food safety education is a valuable and cost-effective component of prevention, but it works best as one element within a broader strategy that includes infrastructure improvement, vendor regulation, and surveillance—not as a standalone substitute for them.

INTRODUCTION

Foodborne illness remains one of the most pervasive and preventable public health challenges worldwide. Global estimates indicate that contaminated food causes approximately 600 million cases of illness and 420,000 deaths each year, with children under five years of age accounting for nearly one-third of the fatal burden [1]. A substantial proportion of these infections originate in the domestic kitchen, where unsafe handling, inadequate cooking, cross-contamination, and improper storage converge with limited consumer awareness of microbial hazards [2]. Because the household is the primary setting for many outbreaks, interventions that reach consumers where they live, cook, and care for dependents are essential complements to regulatory and industry-level controls [3]. Community-based food safety education—defined here as structured, locally delivered learning activities designed to improve knowledge, attitudes, and practices related to food handling among residents of a defined community—has therefore attracted sustained interest from public health practitioners, extension services, and non-governmental organisations [3].

The appeal of community-based education lies in its potential to bridge the gap between scientific food safety guidance and everyday domestic behaviour. Unlike mass-media campaigns, which can raise awareness but often struggle to change deeply embedded routines, community programmes can be tailored to local food cultures, literacy levels, and resource constraints [4]. They can enlist trusted local actors, including community health volunteers, peer educators, and religious or neighbourhood leaders, to model safe practices and reinforce social norms [5]. They can also combine information with practical demonstrations, tool provision, and feedback, thereby addressing not only the "know-what" but also the "know-how" and the material barriers to safe food handling [6]. At the same time, the evidence base for community-based food safety education is heterogeneous, and questions remain about the magnitude, durability, and cost-effectiveness of its effects [6].

The Household as a Critical Setting for Foodborne Illness

The domestic environment occupies a paradoxical position in food safety policy. On the one hand, households are increasingly recognised as a major locus of foodborne disease; on the other, they are largely beyond the reach of conventional regulatory inspection. Epidemiological investigations repeatedly implicate home food preparation in outbreaks associated with Salmonella, Campylobacter, Escherichia coli O157:H7, and norovirus [7]. Cross-contamination from raw meat and poultry to ready-to-eat foods, insufficient cooking temperatures, inadequate refrigeration, and poor personal hygiene are among the most frequently identified risk factors. These risks are amplified in low- and middle-income settings, where access to clean water, reliable refrigeration, and safe food storage may be limited, and where informal food markets and street-vended foods introduce additional hazards [8].

The household is also a setting in which caregivers exercise disproportionate influence over the food safety of vulnerable dependents. Infants and young children, pregnant women, older adults, and immunocompromised individuals are at elevated risk of severe outcomes from foodborne infection. In many cultures, mothers and other primary caregivers are the principal food handlers, and their practices determine the microbiological quality of complementary foods during the critical weaning period [9]. Community-based education that targets caregivers therefore has the potential to interrupt transmission pathways at a point of high leverage. Moreover, because food handling behaviours are often learned within families and reinforced by local custom, interventions that engage the household as a unit—rather than the individual in isolation—may be more likely to produce durable change [10].

Theoretical Foundations of Community-Based Food Safety Education

The design and evaluation of community-based food safety education are informed by several behavioural and social science theories. The most frequently applied framework is the Health Belief Model, which posits that protective behaviour is a function of perceived susceptibility to a health threat, perceived severity of that threat, perceived benefits of the recommended behaviour, perceived barriers to action, cues to action, and self-efficacy [11]. In the context of food safety, Health Belief Model-based programmes seek to raise awareness of the risks of foodborne illness, emphasise the seriousness of consequences for vulnerable family members, demonstrate the benefits of safe practices, and reduce practical barriers such as lack of time, equipment, or knowledge. A quasi-experimental study among mothers in selected Egyptian villages found that a Health Belief Model-based educational programme produced highly statistically significant improvements in safe food-handling practices, with the proportion of mothers exhibiting good practice rising from 15% to 85% after the intervention [12]. This finding illustrates the utility of the model as a planning tool, although the single-group pre–post design limits causal inference [12].

Social Cognitive Theory offers a complementary framework that emphasises reciprocal determinism among personal factors, behaviour, and the environment. The theory highlights observational learning, behavioural capability, self-efficacy, outcome expectations, and reinforcement as determinants of behaviour change [13]. Community-based programmes grounded in Social Cognitive Theory often employ peer modelling, skill-building demonstrations, and opportunities for practice with feedback, thereby enhancing both capability and confidence. A single-blinded randomised controlled trial conducted in urban health centres in southern Iran tested a volunteer-led food safety training programme based on Social Cognitive Theory among community women. Health volunteers received a four-session training programme and subsequently trained women in their local communities. The intervention produced significant improvements in food safety-related behaviours and their determinants among both volunteers and community women, with no comparable changes in the control group [14]. This trial is notable for its use of a train-the-trainer model, which enhances scalability and local ownership [14].

The Theory of Planned Behaviour has also been applied to community food safety education. The theory holds that behaviour is proximally determined by behavioural intention, which in turn is shaped by attitudes toward the behaviour, subjective norms, and perceived behavioural control [15]. A virtual food safety education programme for low-income families in the United States used the Theory of Planned Behaviour to structure both content and evaluation. The programme significantly improved participants' food safety knowledge and self-reported safe food practices, and all theory constructs—attitudes, perceived behavioural control, subjective norms, and behaviour change intentions—improved significantly [16]. Interestingly, only subjective norms and perceived behavioural control were significantly correlated with behaviour change intentions, suggesting that family and community expectations, as well as confidence in one's ability to act safely, may be particularly important levers in low-income contexts [16].

Other frameworks used in the field include the transtheoretical model, social marketing, and the World Health Organization's Five Keys to Safer Food, which provides a simple, memorable set of recommendations that can be adapted across cultural settings [17]. The Five Keys—keep clean; separate raw and cooked; cook thoroughly; keep food at safe temperatures; and use safe water and raw materials—have been incorporated into community programmes in diverse countries, including Iran, Vietnam, and Ecuador [18]. The effectiveness of these programmes depends not only on the validity of the underlying theory but also on the quality of implementation, the intensity of exposure, and the extent to which the intervention addresses the material and social constraints that shape behaviour [18].

Types and Delivery Modes of Community-Based Food Safety Education

Community-based food safety education encompasses a wide range of intervention types and delivery modes. At one end of the spectrum are relatively low-intensity approaches, such as the distribution of pamphlets, posters, and flip charts, or brief

didactic sessions delivered in community centres, health clinics, or schools. At the other end are multi-component programmes that combine education with hands-on demonstrations, tool provision—for example, food thermometers, refrigerator thermometers, and colour-coded cutting boards—home visits, and community-wide social marketing [19]. Between these extremes lie structured training courses for community volunteers or food handlers, participatory consumer groups, and school-based programmes that may extend their reach to families through homework activities and student-led dissemination [19].

One important distinction is between programmes that target individuals directly and those that adopt a train-the-trainer or peer-education model. The volunteer-led Social Cognitive Theory-based trial in Iran exemplifies the latter approach: health volunteers were trained and then transmitted knowledge and skills to women in their social networks [14]. This model can enhance reach and sustainability, because local volunteers are embedded in the community and can continue to reinforce messages after the formal intervention period. However, it also introduces variability in delivery fidelity and requires ongoing supervision and support. A systematic review of food safety education interventions for consumers in developed countries identified 79 relevant studies, including 17 randomised controlled trials, 12 non-randomised controlled trials, and 50 uncontrolled before-and-after studies [3]. The authors noted that community- and school-based educational training interventions showed moderate to high confidence in results for behaviour outcomes in children and youth, with a median standardised mean difference of 0.20. This effect size, while modest, is consistent with the broader behaviour change literature and may translate into meaningful population-level risk reduction when multiplied across large numbers of households. A further meta-analysis of food handler training and education interventions found that training improved knowledge, but effects on attitudes, behaviours, and inspection scores were inconsistent [20]. This finding reinforces the need for community programmes to go beyond information transfer and to incorporate skill practice, reinforcement, and environmental support [20].

Another delivery mode that has gained attention is the use of digital and virtual platforms. The COVID-19 pandemic accelerated interest in online food safety education, particularly for low-income families who may face transportation and scheduling barriers to attending in-person sessions. A virtual Theory of Planned Behaviour-based programme for low-income families in the United States delivered course materials in both English and Spanish through trained native speakers and found significant improvements in knowledge and self-reported safe practices [16]. However, the evidence on virtual delivery remains limited, and questions persist about digital access, participant engagement, and the extent to which online learning translates into sustained behaviour change in the kitchen [16].

Evidence of Effectiveness: Knowledge, Attitudes, and Behaviours

The most consistent finding across the community-based food safety education literature is that structured educational interventions can improve participants' knowledge of food safety principles and hazards. A quasi-experimental study based on the World Health Organization Five Keys manual among Iranian Female Community Health Volunteers found that the intervention group scored significantly higher than the control group on knowledge, attitude, and behaviour at post-test, after adjusting for age and experience [18]. Similarly, a pre–post evaluation of the Food Safety Community-Based Education Programme in a peri-urban informal dwelling in Johannesburg reported that mean food safety knowledge scores increased from 55.57 to 91.31 on a percentage scale, a statistically significant improvement [10]. Although the latter study lacked a control group, the magnitude of change suggests that intensive, peer-led education can produce substantial gains in knowledge among residents of informal settlements.

Evidence on attitudes is more mixed. Some studies report significant improvements in attitudes toward safe food handling, particularly when the intervention explicitly addresses perceived severity and susceptibility. The Health Belief Model-based programme for mothers in Egypt found significant pre–post differences on all model constructs, including perceived benefits and barriers, suggesting that the intervention reshaped not only knowledge but also the motivational antecedents of behaviour [12]. However, other studies have found that changes in knowledge do not always translate into changes in attitudes or practices. A systematic review and meta-analysis of food handler training and education interventions found that, while training improved knowledge, effects on attitudes and behaviours were inconsistent, and some randomised controlled trials showed no significant effect on food premise inspection scores [20]. This gap between knowledge and practice is a recurring theme in the literature and underscores the need for interventions that go beyond information transfer [20].

Behavioural outcomes are the most important test of effectiveness, and here the evidence is encouraging but heterogeneous. The Social Cognitive Theory-based volunteer-led trial in Iran found significant improvements in food safety-related behaviours

among community women, with no comparable change in the control group [21]. A community-level complementary food safety and hygiene intervention in rural Gambia, evaluated through a cluster randomised controlled trial, improved family food preparation behaviours, and follow-up data suggested that some of these improvements were maintained 32 months after the intervention [22]. In Vietnam, a longitudinal study of community-based information, education, and communication activities found that 11 of 17 food hygiene and food safety behaviours were improved or maintained at the second evaluation, and childhood diarrhoea prevalence declined from 21.6% at baseline to 5.9% at the second evaluation [21]. These findings indicate that well-designed community programmes can produce durable behavioural change and measurable health benefits.

At the same time, not all interventions have succeeded. A systematic review of food safety education interventions for consumers in developed countries concluded that, although controlled trials showed significant effects in some contexts, many outcomes were very heterogeneous, and the quality of evidence was not strong enough to support firm decisions about which intervention components are essential [3]. The authors called for more robust experimental designs and for research that builds on interventions shown to be effective in uncontrolled before-and-after studies. A meta-analysis of food handler training similarly found that the evidence base is limited by variability in intervention content, duration, and outcome measurement, and that the effects on behaviour and inspection scores are not consistently significant [20].

Table 1 summarises the findings of key systematic reviews and meta-analyses, highlighting the range of effect sizes and the methodological limitations that characterise the field.

Review	Scope	Key findings	Limitations noted
Young et al. [3]	Consumer food safety education in developed countries; 79 studies	Moderate to high confidence in community- and school-based behaviour outcomes; median standardised mean difference of 0.20; significant effects on behavioural intentions in adults	Heterogeneous outcomes; many uncontrolled studies; need for more robust designs
Young et al. [20]	Food handler training and education; systematic review and meta-analysis	Improvements in knowledge; inconsistent effects on attitudes, behaviours, and inspection scores	Variability in intervention content and outcome measurement
Campbell et al. [5]	Public health interventions in food safety; 15 studies	Evidence supports food handler training and community-based education	Limited number of controlled studies
Sivaramalingam et al. [4]	Scoping review of consumer food safety education	Majority of studies conducted in the United States; variety of intervention types	Geographic concentration; methodological heterogeneity

Table 2 presents selected primary studies and their principal outcomes.

Study	Setting and population	Intervention	Key outcomes
Health Belief Model-based programme for mothers [12]	Four villages in Minia, Egypt; 120 mothers	Health Belief Model-based education on safe food handling	Good practice increased from 15% to 85%; significant improvements in all model constructs
Social Cognitive Theory-based volunteer-led trial [14]	Urban health centres in Marvdasht, Iran; 60 volunteers and 502 women	Four-session training for volunteers, who then trained community women	Significant improvements in food safety behaviours and determinants in both volunteers and women

Five Keys intervention for health volunteers [18]	Iran; 125 Female Community Health Volunteers	Education based on World Health Organization Five Keys to Safer Food	Significantly higher knowledge, attitude, and behaviour scores in intervention group
Virtual Theory of Planned Behaviour-based programme [16]	Low-income families in the United States; 60 participants	Virtual food safety education in English and Spanish	Knowledge increased from 5.32 to 7.43 out of 8; self-reported practices increased from 24.78 to 29.30 out of 35
Community-based information, education, and communication in Vietnam [21]	Rural communities in Vietnam	Flip-chart communication by community groups	11 of 17 behaviours improved or maintained; childhood diarrhoea declined from 21.6% to 5.9%
Gambia complementary food intervention [22]	Rural Gambia; cluster randomised trial	Community-level complementary food safety and hygiene intervention	Improved family food preparation behaviours; some effects maintained at 32 months

Evidence of Effectiveness: Health Outcomes and Economic Evaluation

The ultimate test of community-based food safety education is whether it reduces the incidence of foodborne illness. Direct evidence on this outcome is limited, because most studies measure knowledge, attitudes, or self-reported behaviours rather than laboratory-confirmed infections. Nevertheless, several studies provide indirect or direct evidence of health impact. The Vietnam longitudinal study found a substantial decline in childhood diarrhoea prevalence alongside improvements in food hygiene behaviours, although the study design did not allow the authors to attribute the decline definitively to the intervention [21]. A cluster randomised trial in rural Gambia evaluated the effects of a community-based programme promoting safe and hygienic complementary-food handling practices on childhood infections; the intervention was found to be acceptable to communities and to improve food hygiene practices, with potential downstream effects on diarrhoeal disease [22]. A systematic review of food hygiene interventions at the domestic level concluded that such interventions can effectively improve the microbial quality of food and reduce childhood diarrhoea, particularly when they are delivered with community involvement in intervention design [19].

Economic evaluations of community-based food safety education are relatively scarce, but the available evidence suggests that these programmes can be cost-effective or even cost-saving. A benefit–cost analysis of the food safety component of the adult Expanded Food and Nutrition Education Program in Ohio found that food safety education led 37.4% of participants to improve their food safety behaviours. Under reasonable default assumptions, the benefits of this improvement significantly outweighed the costs, yielding a benefit–cost ratio of between 6.2 and 10.0 [23]. The authors cautioned, however, that current gaps in the literature make it impossible to know with certainty how many people are protected by the education, how long the education remains effective, and the level of risk reduction attributable to behaviour change. A sensitivity analysis using alternative estimates produced a much wider range of benefit–cost ratios, from 0.2 to 56.3, highlighting the importance of filling these research gaps. Nevertheless, most reasonable assumptions led to estimates of benefits that justify the costs. A study of college students also found that a food safety educational intervention positively influenced attitudes, beliefs, knowledge, and self-reported practices, supporting the broader case for educational investment [24]. In street-food settings, educational interventions aimed at vendors have been used to improve knowledge and practices on food safety and hygiene, extending the community-based approach beyond the household [25].

The economic case for community-based education is strengthened by the fact that foodborne illness imposes substantial costs on health systems, households, and economies. These costs include direct medical expenditures, lost productivity, and the long-term sequelae of severe infections, such as reactive arthritis, Guillain–Barré syndrome, and chronic kidney disease. Interventions that prevent even a modest number of cases can therefore generate substantial savings. However, the cost-effectiveness of a programme depends critically on its design and delivery. Low-cost approaches, such as pamphlet distribution or brief group sessions, may have favourable cost-effectiveness ratios if they reach large numbers of people, while intensive multi-component programmes may be cost-effective only if they target high-risk populations or achieve large behavioural effects. **Table 3** summarises the economic evidence.

Study	Setting	Intervention	Economic finding
Zan et al. [23]	Ohio, United States; adult Expanded Food and Nutrition Education Program	Food safety education component	37.4% of participants improved behaviours; benefit–cost ratio 6.2–10.0 under default assumptions
Economic evaluation of school-based interventions [19]	Italy	School-based food safety education	Cost-effectiveness analysis identified the most cost-effective intervention for scaling up
Enhanced food safety cost-of-illness model [23]	State-level nutrition education programmes	Community nutrition education	Model calculates economic value of behaviour change and can be replicated across states

Barriers and Facilitators to Sustained Behaviour Change

The effectiveness of community-based food safety education is not determined solely by the content of the curriculum; it is also shaped by the barriers and facilitators that influence whether participants adopt and maintain safe practices. Commonly reported barriers include lack of time, competing household demands, inadequate equipment—such as food thermometers or separate cutting boards—limited access to safe water, and deeply ingrained habits that are resistant to change [19]. In low-resource settings, structural constraints, such as unreliable electricity for refrigeration or the high cost of safe food, can make it difficult for households to translate knowledge into practice even when motivation is high [8]. Cultural beliefs about food preparation and storage, including the perceived safety of certain traditional practices, may also conflict with recommended behaviours and must be addressed sensitively [10].

Facilitators of behaviour change include the use of trusted messengers, practical demonstrations, and opportunities for social support. Programmes that enlist community health volunteers, peer educators, or respected local leaders are more likely to be accepted and to generate normative pressure for safe practices [5]. Hands-on activities, such as cooking demonstrations and mock food preparation scenarios, can enhance self-efficacy and help participants overcome practical barriers [6]. The provision of simple tools, such as colour-coded cutting boards or refrigerator thermometers, can serve as cues to action and reduce the effort required to adopt safe behaviours [19]. Follow-up and reinforcement, whether through home visits, phone calls, or community group meetings, appear to be important for sustaining behaviour change over time [21].

The Vietnam longitudinal study provides a useful illustration of the importance of sustained community engagement. The intervention was delivered through existing community groups and used portable information, education, and communication materials, allowing activities to continue after the initial project period. Eleven of 17 food hygiene and food safety behaviours were improved or maintained at the second evaluation, suggesting that the self-sustaining nature of the programme contributed to its durability [21]. In contrast, programmes that rely on one-off workshops without follow-up may produce short-term gains in knowledge but are less likely to achieve lasting behaviour change. The college-student intervention evidence similarly suggests that educational gains can be documented across attitudes, beliefs, knowledge, and self-reported practices, but longer-term maintenance requires reinforcement [24].

Cultural Adaptation and Equity Considerations

Food safety practices are embedded in cultural systems that shape what people eat, how they prepare it, and whom they trust for advice. Community-based education that ignores these cultural dimensions is likely to encounter resistance or to be silently discarded once the intervention ends. Culturally adapted programmes, on the other hand, can achieve high levels of acceptability and engagement. A study aimed at designing and validating an educational intervention for rural Mayan Mexican communities based on five essential keys to prevent foodborne diseases emphasised the importance of tailoring content and delivery to local needs and characteristics [17]. Similarly, a virtual food safety programme for low-income families in the United States delivered materials in both English and Spanish through native speakers, recognising that linguistic and cultural congruence can enhance comprehension and trust [16].

Equity is a further consideration. Foodborne illness disproportionately affects low-income households, ethnic minorities, older adults, and people living in informal settlements, yet these groups are often underrepresented in food safety education research. Community-based approaches have the potential to reduce disparities by reaching populations that are not served by

mainstream health promotion channels. However, realising this potential requires attention to access barriers, including transportation, childcare, digital connectivity, and literacy. Programmes that are delivered in familiar community settings, at convenient times, and in accessible formats are more likely to engage underserved populations [10]. The use of participatory methods, such as community advisory boards or co-design workshops, can help ensure that interventions reflect the priorities and constraints of the communities they aim to serve. Educational interventions for street-food vendors also illustrate the importance of context: vendors face regulatory, economic, and infrastructural constraints that household-focused programmes may not address, and effective education must be adapted to these realities [25].

Methodological Challenges in Evaluating Effectiveness

The evidence base for community-based food safety education is weakened by several methodological challenges. First, the unit of intervention is often the community or the household, but outcomes are frequently measured at the individual level, creating risks of contamination and confounding. Cluster randomised controlled trials are the gold standard for evaluating community-level interventions, but they are expensive, time-consuming, and vulnerable to attrition and contamination between arms [22]. Second, blinding is difficult to achieve in educational interventions, and participants may be influenced by social desirability bias when reporting food handling practices. Third, outcome measures vary widely across studies, making it difficult to compare effect sizes or to pool data in meta-analyses. Some studies use knowledge tests, others use self-reported behaviour, and relatively few use objective measures such as microbiological testing of food or kitchen surfaces [20]. Fourth, follow-up periods are often short, leaving uncertainty about the durability of behaviour change. Fifth, many studies are conducted in high-income countries, limiting generalisability to low- and middle-income settings where the burden of foodborne illness is greatest [4].

Addressing these challenges requires investment in rigorous evaluation designs, standardised outcome measures, and longer follow-up periods. Process evaluations that document implementation fidelity, reach, and contextual factors can help explain why some interventions succeed and others fail. Economic evaluations that incorporate spillover effects and long-term effectiveness are also needed to inform resource allocation decisions [23]. Finally, participatory approaches that involve community members in the design and evaluation of interventions can enhance both relevance and validity.

Implications for Policy and Practice

The evidence reviewed in this article supports several implications for policy and practice. First, community-based food safety education should be recognised as a core component of comprehensive food safety strategies, complementing regulatory enforcement, industry standards, and surveillance. Because a substantial proportion of foodborne illness originates in the home, interventions that reach consumers where they cook and eat are essential [2]. Second, programmes should be theory-informed and multi-component, combining knowledge transfer with skill-building, practical demonstrations, and environmental supports such as tool provision. Single-component information campaigns are unlikely to produce sustained behaviour change [11]. Third, the train-the-trainer and peer-education models offer a promising approach to scaling up community-based education, particularly in settings with limited professional health promotion capacity [14]. Fourth, cultural adaptation and community participation are not optional extras but essential conditions for effectiveness and equity [17]. Fifth, sustained follow-up and reinforcement are needed to maintain behaviour change over time [21].

For practitioners, these findings suggest that food safety education should be embedded in existing community structures, such as maternal and child health programmes, schools, and agricultural extension services. Partnerships with local organisations, faith groups, and community leaders can enhance reach and trust [5]. For policymakers, the economic evidence suggests that community-based food safety education can be a sound investment, with benefit–cost ratios that compare favourably with many other public health interventions [23]. However, investment should be accompanied by robust evaluation, so that programmes can be refined and scaled up on the basis of evidence rather than assumption. Street-food vendor education and household education should be linked where possible, because food safety risks cross the boundaries between domestic and commercial food handling [25].

CONCLUSION

Community-based food safety education is a promising and increasingly evidence-supported strategy for preventing foodborne illness. The household is a critical setting for contamination and infection, and interventions that reach caregivers and consumers in their own communities can improve knowledge, attitudes, and practices related to food handling. Theoretical

frameworks such as the Health Belief Model, Social Cognitive Theory, and the Theory of Planned Behaviour provide useful guidance for designing effective programmes, while practical experience highlights the importance of trusted messengers, hands-on learning, cultural adaptation, and sustained reinforcement. The evidence base is heterogeneous, and not all interventions succeed, but the balance of evidence suggests that well-designed community programmes can produce meaningful and durable improvements in food safety behaviour and, in some cases, measurable reductions in diarrhoeal disease. Economic evaluations indicate that these programmes can be cost-effective or cost-saving, although methodological gaps remain. Realising the full potential of community-based food safety education will require continued investment in rigorous evaluation, cultural adaptation, and equitable delivery, so that the benefits of safe food reach all households, particularly those at greatest risk.

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