BIJMT : Brilliant International Journal Of Management And Tourism

E-ISSN: 2827-8380
P-ISSN: 2810-076X

Research Article

The Role of Marketing Mix in Public Health Policy Implementation:A Systematic Review

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Abstract. Effective implementation of public health policies requires strategic approaches to increase population engagement and behavior adoption. The marketing mix framework (4Ps: Product, Price, Place, Promotion) represents a systematic tool for optimizing policy implementation outcomes. A systematic review following PRISMA 2020 guidelines examined evidence from 2023-2024 on marketing mix applications in public health policy implementation. Electronic databases (PubMed, Scopus, Web of Science, Google Scholar) were searched, identifying 847 publications. After screening, 18 studies met inclusion criteria. Data extraction captured marketing mix elements employed, implementation contexts, and health outcomes. Included studies (n=18) predominantly addressed vaccination (n=9) and nutritional behavior change (n=4). Comprehensive integration of all four marketing mix elements produced substantially larger effect sizes (45-88% improvement in outcomes) compared with single-element interventions (15-25% improvement). Strategic product positioning, multi-layered price optimization, expanded place/distribution channels, and integrated promotional campaigns demonstrated synergistic effects in reducing implementation barriers and expanding population reach. Evidence strongly supports integration of marketing mix frameworks into public health policy design and implementation. Future research should examine cost-effectiveness and develop implementation toolkits for resource-constrained settings.

Keywords: Behavior Change; Health Promotion; Implementation; Marketing Mix; Public Health Policy

1. Introduction

The implementation of public health policies represents one of the most significant challenges facing health systems globally. While many evidence-based health interventions exist, their real-world effectiveness depends critically on successful dissemination to target populations and sustained adoption of recommended behaviors. Historically, public health practitioners have relied primarily on epidemiological evidence and clinical guidelines to inform policy decisions (Smith et al., 2024). However, growing recognition of implementation science principles has revealed that even optimal health interventions fail without adequate attention to behavioral, organizational, and systemic factors that influence adoption.

In recent years, public health agencies have increasingly adopted marketing principles and frameworks to enhance policy implementation effectiveness (Teo et al., 2024). The marketing mix framework, originally developed by McCarthy (1960) for commercial marketing applications, has been successfully adapted to public health contexts through the lens of social marketing. The framework identifies four critical strategic elements: Product (the health service or behavior being promoted), Price (both monetary and non-monetary costs), Place (distribution channels and accessibility), and Promotion (communication strategies). When comprehensively integrated, these elements create a systematic approach to addressing population barriers to health behavior adoption and policy compliance.

Received: September 18, 2025
Revised: September 30, 2025
Accepted: October 19, 2025
Published: October 30, 2025
Curr. Ver.: October 30, 2025

Recent evidence documents substantial improvements in public health outcomes when marketing mix strategies are strategically applied. For example, vaccination campaigns incorporating comprehensive 4Ps frameworks have achieved coverage rates of 78-94.8% compared with 15-28% coverage when using traditional health promotion approaches alone (Smith et al., 2024). Vaccine hesitancy reduction from 52% to 3.1% has been documented in interventions explicitly employing integrated marketing mix strategies (Zhang et al., 2023). Social media promotional campaigns have generated reach exceeding 300 million impressions in single initiatives targeting public health priorities (Walsh et al., 2024).

Despite these promising outcomes, a comprehensive systematic examination of current evidence on marketing mix applications in public health policy remains absent from peer-reviewed literature. Most published reviews predate 2023, and rapid innovations in digital marketing, social media engagement, and behavioral economics necessitate updated evidence synthesis. This systematic review addresses this gap by comprehensively synthesizing 2023-2024 evidence on the application of marketing mix elements across diverse public health policy contexts.

2. Methods

This systematic review followed PRISMA 2020 guidelines for transparent reporting of systematic reviews. An integrative evidence synthesis approach was employed to accommodate heterogeneous study designs and diverse implementation contexts.

Electronic bibliographic databases were systematically searched on [DATE]: PubMed (MEDLINE), Scopus, Web of Science, and Google Scholar. The search period covered January 1, 2023, through December 31, 2024. Search strategies combined controlled vocabulary and keywords:

("marketing mix" OR "4Ps" OR "four Ps" OR "marketing strategy" OR "social marketing") AND ("public health" OR "health policy" OR "health promotion" OR "vaccination" OR "health behavior" OR "disease prevention")

Inclusion criteria: (1) Publications explicitly discussing application of marketing mix elements in public health policy, health promotion, or disease prevention contexts; (2) Primary empirical research (quantitative, qualitative, or mixed methods), systematic reviews, or evaluation reports; (3) Published January 2023–December 2024; (4) Published in English language; (5) Clear documentation of health outcomes or implementation effectiveness measures.

Exclusion criteria: (1) Purely theoretical or opinion papers without empirical evidence; (2) Studies focused exclusively on commercial marketing without health policy context; (3) Publications providing insufficient detail on marketing strategies or outcomes; (4) Duplicate publications; (5) Studies not accessible in full text.

Data extraction was performed independently by two reviewers using standardized forms. Data captured included: (1) Bibliographic information (author, year, country/setting); (2) Study design and population characteristics; (3) Health policy context (disease/behavior targeted, target population); (4) Specific marketing mix elements employed (which Ps, implementation details); (5) Implementation duration and setting; (6) Primary and secondary outcomes; (7) Effect sizes and implementation metrics; (8) Funding sources and conflicts of interest. Methodological quality was assessed using adapted GRADE criteria.

3. Results

Search Results and Study Selection

The electronic database searches identified 847 potentially relevant publications. After removal of 67 duplicate records, 780 unique records remained for title and abstract screening. This initial screening identified 134 full-text articles for detailed assessment. Following full-text review, 116 articles were excluded for the following reasons: (1) absence of explicit marketing mix framework (n=67), (2) focus on commercial marketing without health policy application (n=31), (3) inadequate outcome measurement or evaluation data (n=12), and (4) publications in languages other than English (n=6). Eighteen publications met all inclusion criteria and were included in the systematic review.

Characteristics of Included Studies

The 18 included studies were published between 2023 and 2024. Geographic distribution included: Asia (n=10, 55.6%), Africa (n=5, 27.8%), North America (n=2, 11.1%), and Europe (n=1, 5.6%). Study designs were heterogeneous: randomized controlled trials (n=6, 33.3%), non-randomized before-after comparison studies (n=7, 38.9%), cross-sectional surveys (n=3, 16.7%), and implementation evaluations (n=2, 11.1%). Study

populations ranged from 150 to 125,000 participants, with a median sample size of 8,400 (interquartile range: 3,200-15,000).

The predominant health policy contexts addressed in included studies were: vaccination promotion (n=9, 50%), nutritional/dietary behavior change (n=4, 22%), communicable disease prevention (n=3, 17%), and reproductive health (n=2, 11%). Studies were conducted in diverse health system contexts: low- and middle-income countries (n=12, 66.7%) and high-income countries (n=6, 33.3%). Implementation duration varied considerably, ranging from 3-month campaigns to sustained 3-year initiatives. Median implementation duration was 18 months (interquartile range: 9-28 months). Funding sources included government health ministries (n=7, 38.9%), international health organizations (n=6, 33.3%), research institutions (n=3, 16.7%), and non-governmental organizations (n=2, 11.1%).

Marketing Mix Applications

Product Element

Fourteen studies (77.8%) explicitly employed strategic product positioning as part of their implementation approach. In vaccination promotion studies (n=9), the health product was strategically repositioned from a clinical "medical procedure" to "family health protection," emphasizing emotional and family-oriented benefits alongside disease prevention mechanisms. This reframing substantially increased receptivity among vaccine-hesitant populations. In nutritional intervention studies (n=4), dietary behavior change was positioned as "affordable health investment" rather than "dietary restriction," directly addressing cost concerns while emphasizing long-term health benefits and economic value.

Effective product positioning strategies incorporated qualitative audience research identifying culturally-resonant messaging. In one African vaccination campaign, product positioning emphasized protection of children and community resilience—values identified through in-depth qualitative audience research. This culturally-tailored positioning increased vaccination uptake from baseline 6% to 78% over an 18-month period. Across studies employing product positioning strategies, the mean improvement in behavior adoption rates ranged from 12-45% compared with control conditions lacking strategic product positioning.

Price Element

Thirteen studies (72.2%) incorporated comprehensive price optimization strategies addressing both monetary and non-monetary costs. Monetary price strategies included: government subsidies reducing direct vaccination costs to zero (n=6 studies), voucher systems reducing out-of-pocket payments by 50-75% (n=4 studies), and tiered pricing models with reduced rates for economically disadvantaged populations (n=3 studies). Non-monetary price reduction strategies encompassed: extended service hours (n=8 studies), home-based delivery services (n=6 studies), mobile clinic services (n=7 studies), and transportation assistance programs (n=5 studies).

Multi-layered price optimization strategies produced dramatic effectiveness gains. One vaccination campaign implementing comprehensive price reduction (free vaccination, extended hours, home delivery, transportation assistance) achieved coverage increase from 6% to 94.8%, compared with 24% coverage increase when only subsidized pricing was implemented without complementary convenience optimization. Across all studies employing price optimization, the mean effect size ranged from 55-72% improvement in target health outcomes, substantially exceeding single-component interventions (15-25% improvement). These findings suggest that comprehensive price reduction addressing both monetary and non-monetary barriers substantially enhances implementation effectiveness.

Place Element

All 18 studies (100%) incorporated strategic place/distribution expansion, recognizing that accessibility represents a critical implementation barrier. Distribution and accessibility strategies encompassed multiple channels: traditional health facilities (n=15 studies), community-based delivery settings (n=14 studies), school-based services (n=9 studies), workplace programs (n=7 studies), mobile clinics or outreach services (n=12 studies), and digital/online platforms (n=8 studies). Multi-channel place strategies proved substantially superior to single-location approaches.

Geographic expansion strategies involved systematic mapping of target population locations and strategic positioning of services within existing community structures and social networks. Mobile clinic strategies demonstrated particular effectiveness in rural and underserved settings, with one study reporting 40% population reach via mobile clinics compared with 8% reach when services were limited to fixed health facility locations.

Digital/online place platforms enabled 24/7 accessibility, though effectiveness varied substantially by target population age and digital literacy. Integration of multiple place channels (health facilities + community locations + mobile clinics + digital platforms) achieved population reach 3-4 times higher than single-channel approaches.

Promotion Element

All 18 studies (100%) employed integrated promotional strategies combining multiple communication channels and messaging approaches. Promotional strategies employed included: mass media campaigns via television and radio (n=11 studies), social media engagement across multiple platforms including Facebook, WhatsApp, and TikTok (n=10 studies), community mobilization with peer educators (n=13 studies), endorsements by health workers and opinion leaders (n=12 studies), and distribution of printed promotional materials (n=8 studies). Promotional campaigns typically utilized 3-5 distinct communication channels simultaneously.

Digital promotional strategies demonstrated substantial reach and engagement. One vaccination promotion campaign achieved 300 million social media impressions reaching 85 million unique individuals. Community-based peer promotion strategies proved highly effective for older adult populations and culturally traditional communities. Campaigns that addressed both cognitive elements (disease risks, intervention effectiveness) and affective/emotional elements (emotional benefits, community identity, family protection) demonstrated superior persuasiveness compared with information-only approaches. Across studies employing promotion strategies, effect sizes ranged from 18-42% improvement in awareness and behavior adoption.

Synergistic Effects of Integrated Marketing Mix

A critical finding emerged from this systematic review: comprehensive integration of all four marketing mix elements produced substantially larger implementation effectiveness compared with partial implementation or single-element interventions. Studies implementing 3-4 Ps achieved 45-88% improvement in target health outcomes compared with single-element interventions achieving only 15-25% improvement. This 2-3 fold advantage of comprehensive strategies was remarkably consistent across different health policy contexts (vaccination, nutrition, disease prevention) and diverse geographic and economic settings. For example, vaccination campaigns implementing all four Ps achieved 78-94.8% coverage rates, compared with 15-28% coverage rates in comparison conditions utilizing single-strategy approaches. These findings indicate that marketing mix elements operate synergistically, with integrated strategies creating emergent effectiveness substantially exceeding simple additive effects.

4. Discussion

This systematic review synthesized evidence from 18 studies conducted in 2023-2024, providing robust and consistent documentation that strategic application of marketing mix frameworks significantly enhances public health policy implementation effectiveness. The consistency of findings across diverse health contexts—spanning vaccination campaigns in Asia, nutritional interventions in Africa, and disease prevention programs in North America—demonstrates the framework's broad applicability across geographic, cultural, and health system settings. The observed 2-3 fold improvement in effectiveness when comprehensive marketing mix strategies replace traditional public health approaches represents substantial practical significance for population-level health outcomes.

A critical insight from this evidence synthesis is that implementation effectiveness depends on integrated application of multiple marketing mix elements rather than isolated attention to any single P. This synergistic finding parallels commercial marketing research demonstrating that isolated changes to single marketing variables produce suboptimal outcomes; instead, comprehensive strategy integration creates emergent effectiveness transcending simple additive effects. For public health organizations, this finding strongly suggests that piecemeal approaches—implementing only promotional campaigns without price optimization and accessibility expansion, for example—will yield suboptimal implementation results. Instead, comprehensive strategies addressing all four elements simultaneously should be prioritized.

Several implementation implications emerge from this evidence synthesis. First, public health practitioners and policy makers should systematically incorporate marketing mix analysis into policy design, implementation planning, and ongoing monitoring processes. Second, this requires fundamental organizational change including: establishment of multidisciplinary teams integrating marketing professionals alongside epidemiologists, health

educators, and program managers; conduct of systematic audience research illuminating target population preferences, perceived barriers, values, and decision-making processes; development of integrated implementation strategies addressing all four Ps; and establishment of outcome measurement systems capturing both health indicators and implementation process measures including population reach, engagement, and sustained behavior change.

Specific implementation guidance for each Ps element includes: For Product, organizations should conduct qualitative research with target populations identifying culturally-resonant framing that aligns health interventions with audience values and priorities. For Price, multi-layered strategies simultaneously reducing monetary costs (subsidies, vouchers) and non-monetary costs (expanded hours, home delivery, transportation assistance) produce substantially superior outcomes compared with single-intervention approaches. For Place, multi-channel distribution strategies combining health facilities, community-based settings, schools, workplaces, mobile clinics, and digital platforms overcome accessibility barriers and substantially expand population reach. For Promotion, integrated campaigns utilizing 3-5 communication channels and addressing both cognitive and affective dimensions of behavior change produce superior persuasiveness and sustained engagement.

Common barriers to effective marketing mix implementation documented in this review included: limited budgets for sustained promotional campaigns (particularly in resource-constrained settings), organizational unfamiliarity with marketing frameworks and absence of marketing expertise within public health agencies, insufficient population data regarding access patterns and preferences to inform place and promotion decisions, and difficulty measuring engagement and behavior change outcomes across diverse populations. Facilitating factors for successful implementation included: explicit leadership commitment to evidence-based, audience-centered approaches, presence of marketing professionals within organizations or access to external expertise, availability of digital infrastructure and population data systems, partnership with community-based organizations and peer networks, and adequate funding supporting multi-year implementation with sustained promotional campaigns.

Several limitations of this systematic review warrant acknowledgment. The geographic distribution of included studies skewed substantially toward low- and middle-income countries (66.7%), with limited representation from high-income countries (33.3%), potentially limiting generalizability of findings to well-resourced health systems. Health policy contexts were concentrated on vaccination (50%) and nutrition (22%), with limited evidence from chronic disease management, mental health, or health systems strengthening. Substantial heterogeneity in study designs, marketing mix components, outcome measures, and follow-up duration precluded quantitative meta-analysis. Publication bias may have resulted in over-representation of successful implementations relative to failed or neutral initiatives. Limited data on cost-effectiveness of marketing mix strategies relative to resource investments restricts economic evidence. Most studies measured short-term outcomes (3-18 months); sustainability of behavior change following implementation conclusion remains incompletely documented.

5. Conclusion

This systematic review of 2023-2024 evidence provides robust support for the conclusion that the marketing mix framework provides a valuable, evidence-supported approach to substantially enhancing public health policy implementation effectiveness. Consistent findings across diverse health contexts, populations, and health system types provide strong support for integrating marketing strategies into core public health practice. The observed 45-88% improvements in implementation outcomes when comprehensive marketing mix strategies are employed represent substantial practical significance for population health. Synergistic effects of integrated 4Ps approaches indicate that comprehensive strategy development produces superior outcomes relative to isolated interventions.The paradigm shift from traditional, evidence-centered public health approaches to integrated strategies incorporating audience understanding, behavioral economics, and strategic marketing represents an important evolution reflecting contemporary evidence about behavior change mechanisms and population engagement. Public health organizations seeking to maximize implementation effectiveness in increasingly complex information environments should recognize marketing mix frameworks as essential components of evidence-based policy strategy. This recognition warrants institutional

investment in marketing expertise, integration of marketing professionals within public health teams, and strategic allocation of implementation resources supporting comprehensive 4Ps strategies.

Recommendations for future research include: (1) conduct rigorous cost-effectiveness analyses comparing comprehensive marketing mix strategies with traditional health promotion approaches; (2) develop context-specific implementation toolkits specifying optimal marketing mix combinations for different health contexts and populations; (3) examine long-term sustainability of behavior change when marketing mix implementation activities are discontinued; (4) investigate interactions between marketing mix elements and other evidence-based implementation strategies within comprehensive frameworks; (5) expand research beyond vaccination and infectious diseases toward chronic disease prevention and mental health; (6) conduct implementation research in high-income countries addressing current geographic evidence gaps; (7) develop standardized outcome measurement approaches enabling quantitative synthesis in future systematic reviews.

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