

# Barrier Analysis: A Literature Review

*A Critical Review of the Methodology, Evidence Base, and Applications*

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## 1. Introduction

Barrier Analysis (BA) is a rapid assessment tool developed in 1990 by Tom Davis, MPH, to identify the behavioral determinants that influence whether individuals in a given population adopt a particular behavior (Davis, 2004; Davis et al., 2022). Grounded in the Health Belief Model (HBM) and the Theory of Reasoned Action (TRA), BA provides a structured, mixed-methods approach to comparing people who already practice a desired behavior (“Doers”) with those who do not (“Non-Doers”) in order to uncover the most important barriers and enablers to behavior adoption. The methodology was popularized by both Davis and Bonnie Kittle, MPH, who wrote the widely used Practical Guide to Conducting a Barrier Analysis (Kittle, 2013; 2017). Both were awarded the Dory Storms Child Survival Recognition Award in part for their work on this tool, and Davis received the 2012 APHA Gordon-Wyon Award for Community-Oriented Public Health, Epidemiology, and Practice.

Since its inception, BA has been adopted by at least 39 organizations working in 59 countries (57 of which are low- and middle-income countries) to study behavioral determinants across a wide range of thematic areas, including health, nutrition, water, sanitation and hygiene (WASH), agriculture and food security, education, child protection, sexual and reproductive health, injury prevention, and city planning (Wikipedia, n.d.; barrieranalysis.org, n.d.). The training curriculum is available in English, Spanish, French, and Arabic. BA is closely integrated with the Designing for Behavior Change (DBC) Framework, which provides the broader programmatic structure within which BA findings are translated into specific behavior change messages, activities, and monitoring indicators.

This literature review provides a critical examination of the BA methodology, its theoretical foundations, the evidence generated from its application worldwide, and its strengths and limitations. It is intended for an audience of public health professionals, program designers, and researchers who may be considering or currently using BA in their work. The review draws on peer-reviewed publications, organizational reports, training materials, and the grey literature to present a comprehensive assessment of BA’s contribution to evidence-based behavior change programming.

## **2. History and Development**

### **2.1 Origins of Barrier Analysis**

BA was developed in 1990 by Tom Davis while working with Food for the Hungry (FH) in Mozambique, where he sought to improve the effectiveness of community-level child health programs (Davis, 2004; CORE Group, 2010). At the time, behavior change programs in international development often relied on broad health education campaigns that assumed a “knowledge deficit” model: the idea that simply informing people about the benefits of a behavior would lead to adoption. Davis recognized that this approach frequently failed because it did not account for the diverse psychological, social, and structural factors that influence behavior. Drawing on established behavioral science theories—particularly the Health Belief Model and the Theory of Reasoned Action—he designed a rapid, field-friendly tool that would enable program staff to identify which specific determinants were most strongly associated with a target behavior in a given population.

The initial approach, known as the Doer/Non-Doer Study, examined four determinants: perceived self-efficacy, perceived social norms, perceived positive consequences, and perceived negative consequences. This simpler precursor demonstrated the feasibility and value of comparing Doers and Non-Doers, but its limited scope meant that it could miss important determinants. BA expanded on the Doer/Non-Doer approach by incorporating additional determinants drawn from behavioral theory, ultimately arriving at the twelve determinants used in the current standard questionnaire.

### **2.2 The Role of Bonnie Kittle**

Bonnie Kittle, MPH, made pivotal contributions to the dissemination and practical accessibility of BA through her authorship of *A Practical Guide to Conducting a Barrier Analysis*, first published in 2013 and updated in a second edition in 2017 (Kittle, 2013; 2017). This guide provides step-by-step instructions for planning and conducting a BA study, including lessons on developing questionnaires, training interviewers, coding and tabulating data, interpreting results, and translating findings into behavior change strategies. The guide also includes practical exercises, handouts, and annexes that have been refined through years of field training.

Kittle’s training workshops have reached practitioners across dozens of countries and organizations, making BA accessible to field staff who may not have advanced training in behavioral science or epidemiology. Her emphasis on interactive, participatory training methods—including role-plays, mock questionnaires, and group exercises—has been credited with making the methodology practical and approachable. Kittle also

developed and refined the BA Tabulation Table (also known as SBATS), a Microsoft Excel spreadsheet that automates the statistical analysis of BA data.

## **2.3 The Designing for Behavior Change (DBC) Framework**

BA operates within the broader Designing for Behavior Change (DBC) Framework, a practical planning tool developed to help implementers of food security, health, nutrition, agriculture, natural resource management, and other programs design their projects strategically for maximum behavior change impact (Davis & Kittle, n.d.; FSN Network, n.d.). The DBC Framework guides users through a structured process that includes defining a specific, feasible, and effective behavior to promote; identifying the Priority Group and Influencing Group; conducting formative research (including BA) to determine the most significant determinants; identifying “Bridges to Activities”; and selecting program activities to address the identified barriers and leverage enablers.

The integration of BA with DBC means that BA findings are not an end in themselves but serve as the evidence base for designing targeted behavior change communication (BCC) strategies and supporting activities. This linkage between formative research and program design is one of the distinguishing features of the BA/DBC approach and has contributed to its adoption by organizations seeking evidence-based programming.

## **2.4 Evolution and Adoption**

From its origins in Mozambique, BA spread through Food for the Hungry’s programs in Kenya, Bolivia, Ethiopia, and Haiti in the 1990s and early 2000s. The methodology gained broader adoption after CORE Group began hosting the Facilitator’s Guide (Davis, 2004) and as the Food Security and Nutrition Network (FSN Network) made training materials and resources available online. By 2022, at least 39 organizations (including UNICEF, Mercy Corps, World Vision, Catholic Relief Services, and many other international NGOs) had used BA in 59 countries worldwide (Davis et al., 2022).

The methodology has also been used in high-income countries, including by the Baltimore City Government (to study trash can use), Feed the Children and Hunger Free NYC (to study participation in the USDA summer meals program), and the Honey Bee Health Coalition. In 2020–2021, multiple organizations adapted BA to study barriers and enablers to COVID-19 vaccine acceptance in both LMIC and high-income settings (Davis et al., 2022; Figueroa et al., 2022).

## **3. Theoretical Foundations**

BA draws its theoretical grounding from several well-established behavioral science frameworks. Understanding these foundations is essential for appreciating both the strengths and the boundaries of the methodology.

### **3.1 The Health Belief Model (HBM)**

The Health Belief Model, developed in the 1950s by social psychologists at the U.S. Public Health Service, posits that health-related behavior is influenced by an individual's perceptions of: (a) susceptibility to a health threat, (b) severity of the threat, (c) benefits of taking action, (d) barriers to taking action, and (e) cues that trigger action, along with (f) self-efficacy (Rosenstock, 1974; Janz & Becker, 1984). BA incorporates several of these constructs directly as determinants in the standard questionnaire, including perceived susceptibility, perceived severity, perceived action efficacy (which maps roughly to perceived benefits), and cues for action.

The HBM has been widely applied in public health, particularly in studies of preventive health behaviors such as vaccination, screening, and dietary practices. Its emphasis on individual perceptions provides a useful but necessarily limited lens: the model has been critiqued for underemphasizing social, structural, and habitual determinants of behavior (Carpenter, 2010).

### **3.2 The Theory of Reasoned Action / Theory of Planned Behavior**

The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (1975), and its extension, the Theory of Planned Behavior (TPB; Ajzen, 1991), propose that behavioral intention is the most proximal predictor of behavior, and that intention is shaped by attitudes toward the behavior, subjective norms (perceived social pressure), and—in the TPB—perceived behavioral control (similar to self-efficacy). BA draws heavily on these theories, particularly through its inclusion of perceived social norms, perceived self-efficacy, and perceived positive and negative consequences as core determinants.

The TRA/TPB framework's emphasis on social norms has proven particularly productive in BA studies. Across hundreds of BA studies, perceived social norms have been one of the four most commonly identified significant determinants—alongside perceived self-efficacy, perceived positive consequences, and perceived negative consequences (Davis et al., 2022).

### **3.3 Social Cognitive Theory**

Social Cognitive Theory (SCT), articulated by Albert Bandura (1986), emphasizes the concept of reciprocal determinism—the dynamic interaction among personal factors, environmental influences, and behavior. SCT's central construct of self-efficacy—an

individual's confidence in their ability to perform a given behavior—has been integrated into BA as a core determinant. SCT also highlights the importance of observational learning and modeling, which are relevant to BA's examination of social norms and the influence of reference groups.

### **3.4 The Ecological Model**

The ecological model of health behavior (McLeroy et al., 1988; Stokols, 1996) considers the multiple levels of influence on behavior: individual, interpersonal, organizational, community, and policy/structural. While BA's standard questionnaire focuses primarily on individual- and interpersonal-level determinants (perceptions, beliefs, social norms, self-efficacy), the inclusion of determinants such as access, policy, and culture in the expanded twelve-determinant framework represents an effort to capture some organizational and structural influences. Nonetheless, as discussed in Section 6 (Limitations), BA remains primarily a tool for understanding individual-level behavioral determinants and is not designed to comprehensively assess broader structural or systemic barriers.

### **3.5 Integration of Theories in BA**

A distinctive feature of BA is its pragmatic integration of constructs from multiple behavioral theories into a single, field-friendly tool. Rather than adhering strictly to one theoretical framework, BA selects the most empirically useful determinants from across theories and operationalizes them through standardized questionnaire items. The twelve determinants in the current BA questionnaire—perceived self-efficacy/skills, perceived social norms, perceived positive consequences, perceived negative consequences, perceived susceptibility/risk, perceived severity, perceived action efficacy, perceived divine will, cues for action/reminders, access, policy, and culture—represent an eclectic but purposeful synthesis of behavioral science that has proven practical for field use in diverse settings (Davis, 2004; Kittle, 2017).

## **4. Methodology**

### **4.1 The Twelve Behavioral Determinants**

The current BA questionnaire explores twelve potential determinants of behavior. The earlier Facilitator's Guide (Davis, 2004) focused on eight determinants; the expanded set of twelve, which has been standard since the second edition of the Practical Guide (Kittle, 2017), adds access, policy, and culture, and separates perceived positive and negative consequences. The twelve determinants are:

| Determinant                               | Description                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Perceived Self-Efficacy/Skills</b>  | The individual's belief that they can perform the behavior given their current knowledge, skills, and circumstances.                            |
| <b>2. Perceived Social Norms</b>          | The individual's perception that people important to them think they should (or should not) perform the behavior.                               |
| <b>3. Perceived Positive Consequences</b> | What the individual thinks will happen that is positive as a result of performing the behavior (includes advantages and positive attitudes).    |
| <b>4. Perceived Negative Consequences</b> | What the individual thinks will happen that is negative as a result of performing the behavior (includes disadvantages and negative attitudes). |
| <b>5. Perceived Susceptibility/Risk</b>   | The individual's assessment of their own risk of experiencing the health problem or negative outcome that the behavior addresses.               |
| <b>6. Perceived Severity</b>              | The individual's belief about the seriousness of the health problem or negative outcome.                                                        |
| <b>7. Perceived Action Efficacy</b>       | The individual's belief that performing the behavior will actually prevent or reduce the problem.                                               |
| <b>8. Perceived Divine Will</b>           | The individual's perception that it is God's will (or not) that they perform the behavior.                                                      |
| <b>9. Cues for Action/Reminders</b>       | External or internal stimuli that prompt the individual to perform the behavior.                                                                |
| <b>10. Access</b>                         | The individual's ability to access the products or services needed to perform the behavior.                                                     |
| <b>11. Policy</b>                         | Rules, regulations, or protocols that affect whether the behavior can be performed.                                                             |
| <b>12. Culture</b>                        | Cultural practices, beliefs, or traditions that affect the behavior.                                                                            |

Researchers may also add questions corresponding to additional determinants based on a literature review of the specific behavior being studied. For example, BA studies on COVID-19 vaccine acceptance added questions on perceived trust and perceived safety of vaccines (Davis et al., 2022; Figueroa et al., 2022).

## 4.2 The Seven Steps of Conducting a Barrier Analysis

The BA methodology follows seven structured steps, as outlined in the Practical Guide (Kittle, 2017):

**Step 1: Define the Goal, Behavior, and Priority Group.** The team selects a specific, observable, and feasible behavior for study. The behavior is typically one that is expected to have significant positive health or development outcomes if adopted, and where adoption has been elusive despite past promotion. The Priority Group (the

population whose behavior is being studied) is defined precisely (e.g., “mothers of infants 0–6 months” rather than “mothers”).

**Step 2: Develop the Behavior Statement and Screening Questions.** A clear behavior statement is written, and screening questions are developed to classify respondents as Doers or Non-Doers during interviews. The screening questions must be specific enough to accurately categorize respondents.

**Step 3: Develop Questions about Determinants.** The standard BA questionnaire includes both closed-ended and open-ended questions corresponding to each of the twelve behavioral determinants. The questionnaire is adapted to the specific behavior under study, reviewed by technical experts, translated into local languages, and pre-tested.

**Step 4: Organize the Analysis Sessions.** Logistics for fieldwork are arranged, including interviewer selection and training. BA training typically takes 3–6 days and includes instruction on the behavioral determinants, questionnaire administration, respondent classification, and data recording.

**Step 5: Collect Field Data.** Trained interviewers conduct structured interviews with a minimum of 45 Doers and 45 Non-Doers of the target behavior from the Priority Group. The sample size of 45 per group was determined to provide sufficient statistical power to detect meaningful differences between Doers and Non-Doers at a 95% confidence level. Respondents are identified through screening questions at the start of the interview and are classified as either Doers or Non-Doers based on their answers.

**Step 6: Tabulate and Organize the Results.** Responses are coded and entered into the BA Tabulation Table (SBATS), a Microsoft Excel spreadsheet that automatically calculates: odds ratios and estimated relative risks for each response, p-values indicating statistical significance, confidence intervals, and pre-formatted results statements (e.g., “Doers are 4.2 times more likely to give this response than Non-Doers”). This automated analysis greatly reduces the time and statistical expertise required to interpret BA data.

**Step 7: Use the Results to Develop Behavior Change Strategies.** The team reviews the statistically significant differences between Doers and Non-Doers to identify the most important barriers (factors significantly more common among Non-Doers) and enablers (factors significantly more common among Doers). These findings are then used, within the DBC Framework, to develop targeted behavior change communication messages, supporting activities, and monitoring indicators that address the identified determinants.

## 4.3 Data Collection and Analysis

BA uses a mixed-methods approach that combines quantitative comparison of Doers and Non-Doers with qualitative data from open-ended questions. The quantitative component is the core analytical engine: responses to closed-ended questions are tabulated and compared statistically to identify which determinants show significant differences between the two groups. Open-ended questions provide qualitative richness—capturing the specific language, beliefs, and contextual factors that underlie the quantitative patterns—and are particularly useful for designing behavior change messages in the respondents’ own words.

The statistical analysis in BA borrows techniques from epidemiology, using odds ratios (and in more recent versions, estimated relative risks) to quantify the strength of association between specific responses and the behavior. The p-values generated by the Tabulation Table allow users to identify statistically significant differences without requiring advanced statistical training. This design was intentional: BA was developed to be usable by field practitioners, not only by researchers.

## 4.4 Tools and Resources

Several tools support the implementation of BA. The **BA Tabulation Table (SBATS)** is the primary analytical tool and is freely available online. It automates statistical calculations and generates results statements. The **Practical Guide to Conducting a Barrier Analysis** (Kittle, 2017) serves as both a self-study manual and a facilitator’s guide for training workshops; it is currently available in English, Spanish, French, and Arabic. A separate **Barrier Analysis Facilitator’s Guide** (Davis, 2004) provides additional training resources. These materials are hosted by CORE Group and the FSN Network and are freely accessible to practitioners worldwide.

## 5. Applications and Evidence

### 5.1 Scope and Scale of Application

BA has been applied across a remarkably wide range of sectors, populations, and geographic settings. As of 2022, documented applications span at least 59 countries across sub-Saharan Africa, South and Southeast Asia, Latin America, the Middle East, and the Pacific, as well as selected high-income settings in North America. The majority of applications have been in low- and middle-income countries, where behavior change programming is a core component of health, nutrition, and development interventions (Davis et al., 2022).

Organizationally, BA has been used by international NGOs (including Food for the Hungry, Mercy Corps, World Vision, Catholic Relief Services, CARE, Save the Children, and Concern Worldwide, among others), UN agencies (notably UNICEF), government

health ministries, and academic institutions. A 2017 comparative study by Mercy Corps examined 29 BA studies conducted across 7 countries, covering behaviors ranging from handwashing and child feeding to post-harvest maize storage and household reporting of suspected Ebola cases (Mercy Corps, 2017).

## 5.2 Health and Nutrition

The largest body of BA evidence comes from health and nutrition programming. Key application areas include:

**Exclusive breastfeeding.** Multiple BA studies have examined the determinants of exclusive breastfeeding among mothers of infants under six months. Studies in Burundi (Francisco et al., 2013), Mozambique, and other countries have identified perceived self-efficacy, perceived social norms, and perceived positive consequences as frequently significant determinants. These findings have informed the design of peer counseling programs and behavior change communication materials.

**Childhood immunization.** BA has been used to study barriers to routine childhood vaccination and, more recently, COVID-19 vaccine acceptance. A multi-country BA study across Bangladesh, India, Myanmar, Kenya, the Democratic Republic of Congo, and Tanzania examined twelve behavioral determinants of COVID-19 vaccine acceptance and provided actionable recommendations for communication strategies tailored to each country context (Davis et al., 2022). A similar BA approach was applied to study COVID-19 vaccine hesitancy among students, faculty, and staff at a rural public university in the United States (Figueroa et al., 2022).

**Handwashing with soap.** BA studies on handwashing practices have been conducted in multiple countries, with findings frequently highlighting perceived self-efficacy, access to soap and water, and cues for action as significant determinants. These results have informed the design of handwashing promotion programs in community health and WASH programming.

**Maternal and child health.** Applications include studies on postnatal care seeking, birth spacing, use of family planning, and child feeding practices. In each case, BA findings have been used to design context-specific behavior change interventions that move beyond generic health messaging.

## 5.3 Water, Sanitation, and Hygiene (WASH)

BA has been applied to understand barriers to latrine construction and use, safe water storage and treatment, and menstrual hygiene management. For example, World Vision India used BA as part of its Community-Led Total Sanitation (CLTS) programming to understand barriers to latrine use among mothers of children under five, finding that

perceived social norms and self-efficacy were key determinants (World Vision, n.d.). BA studies on water purification through boiling or chlorination in Kenya identified perceived susceptibility to waterborne disease and perceived action efficacy as significant enablers (Davis, 2004).

## **5.4 Agriculture and Food Security**

One of BA's distinctive features relative to other behavioral assessment tools is its deliberate application beyond the health sector. The DBC Framework was explicitly designed to be used in agriculture, natural resource management, and food security programming. BA studies have examined behaviors such as the use of improved seed varieties, soil conservation practices, post-harvest storage techniques, and the adoption of live barriers for erosion control. A controlled comparison by Food for the Hungry in Guatemala found that farmer groups that used DBC (informed by BA findings) to design their behavior change strategies achieved significantly higher adoption of live barriers than comparison groups that relied on conventional approaches without formative research (Davis, n.d.).

## **5.5 Emergency and Outbreak Response**

BA has been adapted for use in emergency settings, including during the West Africa Ebola outbreak, where it was used to study barriers to household reporting of suspected Ebola cases and adoption of safe burial practices (Mercy Corps, 2017). During the COVID-19 pandemic, multiple organizations conducted BA studies on vaccine acceptance and preventive behavior adoption across both LMIC and high-income settings. These emergency applications demonstrate the methodology's adaptability and its potential for rapid deployment in time-sensitive situations.

## **5.6 Other Sectors**

Additional documented applications of BA include: education (school attendance and retention), child protection (reporting of abuse), sexual and reproductive health (contraceptive use among young women), injury prevention (explosive ordnance risk education in conflict-affected areas), and urban planning (trash can use in Baltimore). While the evidence base in these non-traditional sectors is thinner than in health and nutrition, these applications illustrate the methodology's adaptability to any context where identifying behavioral determinants can inform programmatic strategy.

## **5.7 Common Findings Across Studies**

While BA results are inherently context-specific, some patterns emerge across the broader evidence base. The four most commonly identified significant determinants across BA studies are: perceived self-efficacy/skills, perceived social norms, perceived

positive consequences, and perceived negative consequences (Davis et al., 2022). This finding is consistent with the emphasis placed on these determinants in the behavioral theories underpinning BA and suggests that these four constructs should always be explored in any BA study. At the same time, the fact that other determinants (such as access, perceived divine will, or policy) are significant in particular contexts underscores the value of the comprehensive twelve-determinant framework.

## 6. Strengths and Limitations

### 6.1 Strengths

**Practical and field-friendly.** BA was designed for use by program implementers, not only by researchers. Its standardized questionnaire, structured seven-step process, and automated analysis tools make it accessible to staff with limited research training. A BA study can typically be designed, conducted, and analyzed within one to three weeks.

**Rapid and actionable.** Unlike more resource-intensive formative research methods (such as ethnographic studies or large-scale surveys), BA produces actionable findings quickly. The direct link between BA results and the DBC Framework's planning process means that findings translate readily into specific behavior change strategies.

**Grounded in behavioral theory.** BA's twelve determinants are drawn from well-established behavioral science frameworks, providing a theoretically sound basis for identifying barriers and enablers. This theoretical grounding distinguishes BA from purely qualitative or intuition-based approaches to program design.

**Quantitative rigor with qualitative richness.** The mixed-methods design—combining statistical comparison of Doers and Non-Doers with open-ended qualitative data—provides both the evidence of which determinants are significant and the language and contextual understanding needed to design effective messages and activities.

**Versatile and cross-sectoral.** The methodology has been successfully applied across health, nutrition, WASH, agriculture, education, child protection, emergency response, and other sectors, and in diverse cultural and geographic contexts. This versatility is facilitated by the methodology's focus on the universal process of behavioral determinant analysis, rather than on sector-specific content.

**Freely available tools and training materials.** All core BA resources—including the Practical Guide, the Tabulation Table, and training curricula in four languages—are freely available online, reducing barriers to adoption by under-resourced organizations.

### 6.2 Limitations

**Reliance on self-reported data.** Like most survey-based methods, BA depends on respondents' self-reports of their behaviors and perceptions. This introduces the possibility of social desirability bias (respondents giving answers they believe are expected or socially acceptable), recall bias, and misclassification of Doers and Non-Doers based on screening questions. While the Doer/Non-Doer classification reduces some forms of bias by anchoring responses to actual behavior status, the accuracy of the classification depends on the quality of the screening questions.

**Cross-sectional design.** BA captures a snapshot of behavioral determinants at a single point in time and does not establish causal relationships. While the Doer/Non-Doer comparison provides evidence of association between determinants and behavior, it cannot determine whether a given perception causes the behavior or results from it. Longitudinal or experimental designs would be needed to establish causality.

**Sample size and generalizability.** The standard sample of 45 Doers and 45 Non-Doers was chosen to provide adequate statistical power for detecting meaningful differences, and this sample size has been validated through practice. However, it does not permit subgroup analysis (e.g., comparing determinants by age, income, or ethnicity within the sample), which limits the ability to identify differential barriers for specific population subgroups. Additionally, because BA uses convenience or purposive sampling rather than probability-based sampling, findings are most appropriately generalized to the specific study population and context.

**Assumption of determinant independence.** The BA Tabulation Table analyzes each determinant independently, calculating odds ratios for individual responses without controlling for potential confounding or interaction effects among determinants. More sophisticated multivariate techniques (such as logistic regression) could provide a richer picture of how determinants interact but would require larger samples and greater statistical expertise.

**Individual-level focus.** Although the expanded twelve-determinant framework includes access, policy, and culture, BA remains primarily a tool for understanding individual-level perceptions and beliefs. It is not designed to comprehensively assess structural barriers such as poverty, health system failures, or governance challenges. Organizations using BA should complement it with other assessment methods (such as health system assessments, political economy analyses, or participatory rural appraisals) to address the full range of barriers to behavior change.

**Training requirements.** While BA is designed to be field-friendly, effective implementation still requires training (typically 3–6 days) and practice. Inadequate training can lead to poorly constructed behavior statements, inaccurate Doer/Non-Doer

classification, weak data collection, and misinterpretation of results. In resource-constrained settings, the investment in training may be a significant consideration.

**Limited formal validation of the questionnaire instrument.** While the BA questionnaire has been used extensively and refined over decades of practice, it has not undergone the formal psychometric validation (test-retest reliability, construct validity, factor analysis) that is standard for established survey instruments in behavioral science. This has been noted as a limitation by some researchers (e.g., in studies where BA findings were compared with results from other methods).

## **7. Future Directions**

### **7.1 Methodological Refinements**

Several methodological refinements could strengthen BA's analytical rigor while maintaining its field-friendly character. These include: developing guidance on multivariate analysis of BA data for users with appropriate statistical capacity; conducting formal psychometric validation of the standard questionnaire instrument; exploring digital data collection platforms (such as KoboToolbox, SurveyCTO, or ODK) that could streamline data entry and reduce errors; and developing protocols for integrating BA with complementary methods such as qualitative in-depth interviews, focus group discussions, or social network analysis.

### **7.2 Digital Tools and Technology**

The integration of digital technology into BA fieldwork represents a significant opportunity. Mobile data collection tools can reduce the time between data collection and analysis, enable real-time quality checks, and facilitate the use of BA in remote or hard-to-reach settings. Some organizations have already begun using platforms like KoboToolbox for BA data collection. Further opportunities include the development of mobile-friendly versions of the Tabulation Table and the use of WhatsApp or other messaging platforms for community-based BA data collection.

### **7.3 Expansion into New Sectors**

While BA has been applied across a wide range of sectors, there is room for further expansion. Emerging areas of potential application include climate change adaptation behaviors, environmental conservation practices, financial literacy and savings behaviors, digital literacy and technology adoption, and injury prevention in diverse contexts. As global development programming increasingly recognizes the importance

of understanding behavioral determinants across all sectors, BA's flexible framework positions it well for continued cross-sectoral application.

## **7.4 Integration with Other Frameworks**

BA's value could be enhanced through more systematic integration with complementary behavioral science frameworks. For example, the COM-B model (Capability, Opportunity, Motivation – Behaviour; Michie et al., 2011) and the Behaviour Change Wheel provide a more comprehensive mapping of intervention types to behavioral determinants. Integrating BA findings with human-centered design (HCD) approaches could strengthen the translation of determinant analysis into user-centered intervention design. Additionally, pairing BA with qualitative ethnographic methods (such as Spradley's ethnographic interview approach) could provide deeper contextual understanding of the barriers and enablers identified through the quantitative analysis.

## **7.5 Strengthening the Evidence Base**

The publication and dissemination of BA study results remains an area for improvement. While hundreds of BA studies have been conducted, relatively few have been published in peer-reviewed journals, and many remain in organizational grey literature. Greater investment in publishing BA findings—along with comparative analyses of BA results across studies, countries, and behaviors—would strengthen the evidence base and allow for meta-analytic reviews. The Mercy Corps comparative study of 29 BA studies (2017) provides an example of the kind of cross-study analysis that could yield important insights about which determinants are most commonly significant across different behaviors and contexts.

## **8. Conclusion**

Barrier Analysis, developed by Tom Davis in 1990 and widely disseminated through the practical guides and training programs of Davis and Bonnie Kittle, has established itself as one of the most widely used rapid assessment tools for identifying behavioral determinants in international development and public health programming. Its grounding in established behavioral theories, its structured and field-friendly methodology, its automated analytical tools, and its integration with the Designing for Behavior Change Framework have made it accessible to a broad range of organizations and practitioners working across diverse sectors and settings worldwide.

The evidence generated by BA studies across 59 countries has contributed meaningfully to the design of behavior change interventions that move beyond generic health messaging to address the specific barriers and enablers operating in particular populations. The consistent finding that perceived self-efficacy, perceived social norms,

and perceived positive and negative consequences are among the most commonly significant determinants provides a useful foundation for program design, while the identification of context-specific determinants (such as perceived divine will, access, or policy) in individual studies underscores the value of conducting BA rather than relying on assumptions.

At the same time, BA has real limitations that users should understand and account for. Its reliance on self-reported data, its cross-sectional design, its standard sample size that precludes subgroup analysis, and its individual-level focus all represent constraints that should inform how BA findings are interpreted and used. BA is most powerful when used as one component of a broader formative research strategy that also includes qualitative methods, structural assessments, and participatory approaches.

Looking ahead, opportunities exist to strengthen BA's methodological rigor through digital data collection, multivariate analysis, and formal instrument validation, and to expand its application into emerging sectors where understanding behavioral determinants is critical. Greater investment in publishing and disseminating BA findings will also strengthen the collective evidence base. As the global health and development community continues to recognize that effective programming requires understanding why people do or do not adopt desired behaviors, BA's practical, evidence-based approach will remain a valuable tool in the behavioral science toolkit.

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