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Measuring Tactical and Analytical Skills in Counter-Terrorism Training: An Observation-Based, Mixed-Methods Evaluation in Punjab Police

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Abstract: *The Counter-terrorism requires careful study because police are expected to act under difficult and aggressive security situations. This study assesses a counter-terrorism training course in Punjab, Pakistan, for police recruits to determine: (1) knowledge gains, (2) changes in attitudes, and (3) improvement of practical tactical skills. An explanatory sequential mixed-methods design was employed, including a one-group pre-test/post-test assessment with correlational analysis of 50 trainees who completed both the training and outcome assessments, as well as qualitative interviews of trainees, instructors and experts. The analysis found statistically significant improvements in counter-terrorism knowledge, several positive mindset changes and better tactical abilities following the training sessions. The relationships among initial knowledge, attitude and skill levels were also correlated with one another, and these relationships became stronger at follow-up. There were no gender differences in knowledge or skill gain, although women showed greater attitude improvement ($p<0.01$). Qualitative themes identified a solid theoretical background as an overarching strength of the program, while gaps in scenario-based practical training and psychological preparedness were notable weaknesses. Trainees benefited from interactive training methods and reported that they fostered a counter-terrorism mindset, but to improve these programs they recommended adding stress-management, adapting course content to the local cultural context, providing gender-specific training, and modernizing simulation technology. Quantitative and qualitative findings together paint a more comprehensive representation of training effectiveness, as well as remaining gaps in the program. The study contributes to theory by incorporating gendered learning and in-depth perspectives on learning processes alongside the use of Kirkpatrick's training model and adult learning principles, with a specific focus on police training. We propose enhancing the current curriculum with experiential learning, scenario drills, simulations, psychological resilience building and context-specific modules.*

Keywords: Counter-Terrorism, Punjab Police, Mixed Method, Pakistan

Introduction: Extremism and terrorist threats are transforming the world in the 21st century. Terrorism has persisted even in countries such as Pakistan, which has experienced significant cost in terms of human loss and economic burden (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). To counter this, embedding specialized training within law enforcement has become one of the primary internal security measures to combat terrorism. Police officers serve on the frontline and are responsible for proactive enforcement, as well as community relations and intelligence gathering. Yet, police training programs in Pakistan are still archaic and detached from ground realities (National Commission for Human Rights, 2018). Training curricula are mostly textbook based, devoid of realistic or simulation-based exercises, and do not fully arm officers for the diversity of terrorism challenges. Risks are considerable, but there is a lack of well-established and sustainable counter-terrorism

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training programs for law enforcement (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022).

This is an important gap to fill if we want to avoid wasting time and money on methods of training that may not meet the needs of police: there can be no real rigor without robust evidence without evaluations. Current policies, including Pakistan's National Policy for Prevention of Violent Extremism 2024, call for interactive training that is adaptable and regularly assessed (National Counter Terrorism Authority, 2024). However, in Pakistan, very few empirical studies have assessed the results of such training, leaving little information about the effectiveness of police training. But, as evidence from overseas suggests, counter-terrorism training for police must stretch beyond messages about terrorism. It also has to prepare police counter-terrorism personnel, both psychologically and physically. For example, studies demonstrate that training involving simulation exercises enhances decision-making (McCraty & Atkinson, 2012; Andersen et al., 2015), and that a lack of practical training is one reason many trainees find it challenging to apply theory to practice (McCraty & Atkinson, 2012; Andersen et al., 2015). Lastly, theories of adult learning suggest that police officers learn better when training uses their experience and allows them to be doers. Knowles' andragogy explains that adult learners are self-directed and learn best when the content is related to their work (Knowles et al., 2015). Also, Kolb's theory of experiential learning states that an individual learns better through being actively involved in the learning process (Kolb, 1984). This reality is particularly relevant to police training, which makes the case for scenario-based drills, field exercises and debriefings that help officers turn conceptual understanding into practical operational skill.

There are different models of training and evaluation that each cater to a distinct spectrum of learning needs and evaluation outcomes. Kirkpatrick's model assesses the result of training at four levels: reaction, learning objective/knowledge and skills, behavior change on the job, and organization-level outcomes (Kirkpatrick & Kirkpatrick, 2006). Many evaluations of police training programs assess participants on their degree of knowledge gain, but fail to evaluate whether such programs cause a change in attitudes and behavior, which is crucial for skill transfer, especially when it comes to counter-terrorism. Furthermore, the attitudes and mindset of trainees, as components from the affective domain, are essential for ethical and community-oriented counter-terrorism (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). Earlier research has shown that police are effective actors in preventing violent extremism (CVE), and that positive attitudinal changes such as respect for human rights and community engagement matter in this process (National Counter Terrorism Authority, 2024). However, these soft skills are often underemphasized in most programs. Additionally, psychological preparedness — the capacity to handle stress and trauma when the event shifts to a terror response — is frequently neglected. Resilience training, including stress management and mental conditioning, is said to increase lower-tier officers' performance when dealing with high-pressure counter-terrorism incidents (McCraty & Atkinson, 2012; Andersen et al., 2015). If this is not included in training, officers may have the knowledge and technical skills needed, but will be missing the ability to cope with stress that comes from situations they may encounter on the job.

Pakistan has a similar scenario, where local factors influence the training of officers because of a lack of integration of local

knowledge, absence of a standardized syllabus, and underuse of local context (National Commission for Human Rights, 2018). Pakistan police training is of disparate standards and viewpoints. In the case of female police officers, it is more complicated; existing programs do not address structural barriers and other roles female officers play, thus limiting participation and learning of female officers (National Commission for Human Rights, 2018). Keeping these challenges in view, the present study aims to examine the pilot counter-terrorism training program of Punjab Police. This training was restructured to adapt the curriculum to current methodology. For example, problem-based learning and interactive simulations were combined with behavioral models such as the stages of change for attitude formation. As already mentioned, there was particular emphasis on Knowles' theory of andragogy and Kolb's theory of experiential learning, as they hoped to see a relationship between knowledge gained and changes in attitude and skill (Knowles et al., 2015). The counter-terrorism practices training for trainees was also based on Prochaska and DiClemente's (1983) principles of change. In short, this program was designed to create a cadre of officers who were not only informed, but adaptive, strategic, and emotionally intelligent, and who would cope with adversity in healthy ways.

Hence, it is essential to empirically assess the results of this innovative training format. This paper investigates the mixed-methods model and examines how police trainees are impacted in terms of tactical and analytical skills. Both quantitative information, for example positive or negative changes in scores and observed competences, and qualitative information, from participants on strengths and weaknesses of the training and from experts on whether the impacts are sustainable, is included in the evaluation. Hence, it becomes possible to examine the improvement of police trainees' learning depth as well as the optimization of counter-terrorism training models. The article also aims to lay out practical recommendations on how to train counter-terrorism practitioners in Pakistan and other countries that may have similar challenges (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022).

Research Objectives and Questions: According to the above justification, several objectives and research questions guided the study. These were constructed to span the entire range of anticipated results, from learning through performance and program improvement needs:

Objective 1: Measure knowledge and skills learned through the counter-terrorism training program.

Research question 1 (RQ1): What do the existing counter-terrorism training programs teach police trainees? Does the training help trainees better understand key theoretical concepts behind terrorism (e.g. recognition of threat/stereotypes, legal frameworks and strategies) as well as practical skills (tactical response/coordination in incidents)?

Objective 2: Assess Impact on Operational Readiness

RQ2: How much does counter-terrorism training pay off in terms of real-life police performance? It focuses on trainees' ability to transfer what they learn cognitively and tactically into practice, such as exercising judgement and teamwork under the simulated strain of terror.

Objective 3: Investigate changes in perceptions and attitudes.

RQ3: (pre-orientation) What are the attitudes and perceptions of police trainees towards counter-terrorism strategy, including ethical considerations and community

engagement too? Questions here relate to whether training has an effect on mindset of trainees – like commitment to human rights, willingness to work with communities in countering extremism and overall confidence and motivation regarding their role in counter-terrorism.

Objective 4: Find the strengths and weaknesses of the training program.

RQ4: What are the current strengths and weaknesses of the content, delivery, and effectiveness of the counter-terrorism training program?

Objective 5: Formulate suggestions to improve the effectiveness of training.

RQ5: Based on the results from this evaluation study, how can police trainees' counter-terrorism training programs be improved? This aims at converting the assessment output into steps to be taken, or a plan of action for the next iteration, like providing new modules and making pedagogical or policy-level alterations.

These aims and questions not only ensure that the study measures outcomes, but ask why or why not the training is working and how it can be more effectively linked to leading practices in both adult education and counter-terrorism capacity-building.

Hypotheses: The study thus hypothesized the impact of training through practical and testable expectations.

H1: Police trainees will show a significant increase in knowledge about the threats posed by terrorism and the ways to respond to them after participating in the counter-terrorism training (This indicates an expectation that scores on post-training tests on objective and conceptual knowledge will be higher.)

H2: Trainees will demonstrate considerably greater operational readiness post-training – essentially, a difference-in-difference in performance pre-post counter-terrorism training. (This hypothesis has been assessed by comparing trainees' demonstrations of practical exercises and scenario responses pre- and post-training, in the absence of a true control group (i.e., once again, not using untrained officers as a comparison). It fits with the idea that training translates into job performance.

H3: The counter-terrorism training has a positive effect on trainees' attitude, particularly toward ethical conduct and community engagement in counter-terrorism operations. For instance, trainees might show increased agreement with ideas such as human-rights-based policing, or greater willingness to collaborate with information from the community after taking the course.

H4: The content and delivery methods in the training program will have significant effect on trainees' satisfaction and training effectiveness. This hypothesis indicates that if the training methods are interactive and pertinent, as opposed to lecture-heavy or obsolete, then satisfaction ratings and overall perceived effectiveness according to trainees would be higher.

H5: Trainees' perception of the overall extent to which training was effective will correlate significantly with their self-reported confidence in dealing with terrorism-related situations. Put another way, if participants believe they learned a lot from the training, they should also feel more confident and prepared to apply what they learned in an actual threat context, suggesting that the skills and knowledge were internalized.

To test these hypotheses, statistical analyses of the quantitative data were performed, as discussed in the Methods section. This was complemented with the qualitative component to explain the same phenomena that were not as clear from quantitative data alone, and also to show which aspects of the training content influenced attitudes and confidence.

This study is viewed holistically with the above objectives, research questions, and hypotheses. It indicates whether the training resulted in measurable outputs, while also revealing how and why some aspects of the training were successful and other elements were unsuccessful, connecting theory with practice for counter-terrorism education.

Literature Review: Counter-terrorism training is one of the basic elements for equipping forces such as police to respond to terrorism (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). In training members of a police force, every officer has three elements: knowledge, meaning what terrorism is, the laws surrounding terrorist activity, and how police operate; skills, meaning both tactical and operational capabilities; and attitude, meaning the mindset that combines ethics with law enforcement. Research has shown that deeper training courses can improve participants' knowledge of terrorism and laws relating to it (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). For example, Ahmed (2019), Khan et al. (2020), and Kachchhi et al. (2020) found that police officers who completed specialty CT courses had increased knowledge of extremist ideology, threat assessment and the associated tactical framework compared to their pre-training levels. But there is still a conspicuous and persistent lack of knowledge-practice integration in the literature. Most training programs are designed to provide information but fail at designing the support needed to bring that information to field-ready operation. Officers' training therefore lacks operational readiness. Because the training lacked a practical, hands-on component and scenario simulation, officers were unable to implement the counter-terrorism concepts they had mastered in class into real-world events (Ahmed, 2019; Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). This indicates that tactical training is more than classroom delivery and that classroom and exercise-based training alone does not create adequately trained operational units.

Simulation and Scenario-Based Learning: The past few years have seen the advent of more interactive and scenario-focused training in the security or emergency response field. Bieler et al. (2020) and Achatz et al. (2023) also found tabletop simulations and scenario-based training exercises useful in the context of health care provider training, particularly the Terror and Disaster Surgical Care course. These studies also inform the emphasis on simulations in Pakistan's PVE Policy 2024. The studies showed that trainees given realistic training exercises, for example practice for mass-casualty terrorist events, performed tasks with greater operational confidence and decision-making than those given more didactic training via presentations. Within law enforcement, scenario-based training may include mock terrorist event training, use-of-force training and red team/blue team training. All of these approaches are grounded in experiential learning theory and offer the hands-on experiences necessary for experiential learning to take place (Kolb, 1984). They also offer a safe and secure environment for counter-terrorism trainees, working in high-stakes areas, to practice, fail and learn.

High-fidelity simulations are known to have several advantages, and yet implementation is rarely realized due to lack of resources. Most notably, a focus group study of police trainings in the UK (2023) describes several trainings as "poorly organized," characterized by little standardization and uneven outcomes. Policymakers therefore called for a quality standard and regular updates for training programs. The National PVE Policy 2024

even encourages Pakistan to utilize technology, such as virtual reality (VR) and extended reality (XR) simulations, to adequately train officers in responding to the evolution of threats (National Counter Terrorism Authority, 2024). All these efforts still come with disadvantages, because their application is strongly limited by a lack of funding and qualified personnel. As such, most police courses are still structured around traditional lectures instead of innovative new tools and simulators.

Adult Learning Theories in Law Enforcement Training: The integration of adult learning theories into police training programs is long overdue, too. Knowles and his theory of andragogy suggest that police trainees are self-directed and goal-oriented learners, who also bring a stock of knowledge and experience into the learning context (Knowles et al., 2015). Adult learners are motivated by relevance when they see the correlation between the training and their job. In particular, they are amenable to being collaborative partners in the training process. Hence, training designs should involve adult learners as independent problem solvers and experience sharers. The special circumstance of mid-career police officer training requires the use of andragogical methods. In fact, the training program being evaluated included principles of andragogy: practical learning in an interactive, experiential context, building from application to problem solving through case studies that are related to on-the-job situations with respect to terrorism. This training design is supported in the literature. It has been shown that engagement and retention in training can be supported through problem-based and peer-learning approaches. Knowles et al. (2015) also note that adult learners are more motivated when teaching methods are varied and when the content is relevant to their experience.

According to Kolb's Experiential Learning Theory, full learning only occurs when one cycles through the four stages of a learning experience, which are concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). In counter-terrorism, this might mean taking part in a hands-on exercise, then thinking about how one performed during a post-event debrief: what went well, and what was less good. Then the trainee theorizes lessons or principles through the instructor's theory input and tries out better practices during the next exercise. Cycling through these steps is followed by reinforcement of a learning skill. Transformative Learning Theory (Mezirow, 1991) asserts that adults learn when they engage in critical reflection resulting in a change of perspectives. This kind of training that forces trainees to rethink their approach to community policing or use of force in counter-terrorism is likely to have a significant influence on their attitudes. Mezirow (1991) suggests that journaling and guided dialogues are necessary methods to encourage critical reflection, as well as to deal with the absence of post-event debriefs, another component of our program.

Behavioural Change and Psychological preparedness: Counter-terrorism work needs technical skills, but also the correct mindset and behaviour when under pressure. The Trans-Theoretical Model (TTM) of behaviour change provides insights into how human beings act in stages in terms of behavioural change from pre-contemplation to maintenance (Prochaska & DiClemente, 1983). As a model for training, the TTM provides guidance that change efforts should be appropriately tailored to an individual at stages of readiness (Schneiderman & Laffel, 2000). A few sessions from the beginning and a few sessions at the end could address all 5 steps:

specifically, during the first weeks of training, you might address awareness and motivation (for trainees who may be unmotivated to change), and later focus on action and maintenance of new practices (for trainees already employing what is learned). In policing, this means first overcoming the resistance of some to adopting new strategies or technologies and then making sure that the skills become second-nature through practice and repetition. This application of TTM to our study has not been previously found within police training resource materials, which serves to establish the uniqueness of our approach.

A further theme to emerge from the recent literature is psychological resilience. Officers with extensive involvement in terrorism are almost guaranteed to encounter traumatic events, threats to their own safety, and long-term chronic stress. Rizvi (2022) proposes increased training on stress management (McCraty & Atkinson, 2012; Andersen et al., 2015), resilience, and emotional intelligence as part of mental preparation for officers. Counter-terrorism/tactical training (even in Pakistan) often neglects stress management, resilience and emotional intelligence (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). The result being that some officers pass easily various theoretical exams, but will likely get out of their depth and burnout in the harsh environment of fieldwork. The qualitative part of the earlier research tries to discover whether trainees are psychologically ready and what other domains of psychological preparation he / she would prefer to cover. Such practices are under-explored in the literature related to counter-terrorism and this study is, to our knowledge, the first contribution of such psychologically and emotionally rich detail.

Localization and Intersectionality: The evidence from empirical studies focusing on Pakistan — and a developing-country context more broadly — highlights further layers of challenges. The National Commission for Human Rights (NCHR) of Pakistan, in its report published in 2018, revealed the scale of regional disparities involved in police training across Pakistan (Zia, 2021). Certain provinces possessed training programs that were contemporary and well-resourced; others had training programs that were outdated and lacking resources, highlighting a country with stark inequality in capability to fight terrorism. This conveys that regional training should focus on developing and sharing training curricula and other types of programs. And then there is the cultural aspect. Imported training from other countries may not fit local socio-political configurations. It is also essential that the training includes local systems and dynamics of and within terror groups, an understanding of the social contract in Pakistan defining police-population relationships, and regional dialects and norms (National Commission for Human Rights, 2018). Similarly, in Pakistan, women police officers remain underrepresented in counter-terrorism duties, partly because training opportunities and content are not sufficiently designed around female officers.

Naz and Abbasi (2021) propose that to harness the behavioural potential of police in CT operations, gender-sensitive training, including training modifications, bias training and recognition of women's potential as community interlocutors, would be required (National Commission for Human Rights, 2018). In our case, even though only 10 out of 50 were female trainees (20%) and so we gathered fewer experiences from this group, they still play a vital role in assessing whether the training came across as inclusive or inadvertently exclusive to male officers. The literature would predict that female

trainees, in the absence of intentional gender integration, would regard the content as less relevant and their career paths as different from others.

In summary, the literature provides robust guidance for an effective counter-terrorism training program that is comprehensive and integrated. It should combine theory and practice, with theory rooted in adult learning and behaviour-change theories where applicable, and practice based on extensive simulation. There also needs to be a psychosocial preparedness component designed to enhance psychological resilience in real scenarios, as well as a local contextualization component. This necessitates a combination of methods: both outcome metrics and qualitative insights are required to evaluate such a program. We build on these existing observations here but fill two major gaps: one, a lack of empirical evaluation in the Pakistani context, and two, the incorporation of gender and psychosocial readiness into the training evaluation. In the following sections, we explain how our methods were designed to systematically measure these facets and present findings in light of the above theories and studies.

Methodology: ***Research Design***

The design used for this study was an Explanatory Sequential Mixed-Methods design (Creswell & Plano Clark, 2018). This design was done in two parts. First, in the quantitative phase, the researchers performed one-group pre-test/post-test evaluations for the effectiveness of the training program. The data gathered consisted of pre- and post-training knowledge, attitudes and skills of the trainees. Instead of a separate control group, each trainee's pre-training performance served as his or her own baseline for comparison with post-training performance. Second, in the qualitative phase, individual in-depth interviews and focus group discussions (FGDs) were conducted to explain and elaborate the results from the first phase. The qualitative data were used to support and describe the context of trainees' experiences, and also articulate the perceived strengths and weaknesses of the program.

A major reason behind using mixed methods was that quantitative data captured the observed changes after training, while responses from participating educators and trainees provided required explanations about why and how those changes took place (Creswell & Plano Clark, 2018). Therefore, this allowed the study to give a more comprehensive evaluation of how well the training works than it could if either method were used individually.

Participants and Sampling: The study population included all police personnel participating in counter-terrorism training in the Punjab police department, including all trainees and instructors. Trainees and key informants were purposively sampled from this population. For the quantitative sample, there were 50 police trainees (40 males, 10 females) from the specialized Counter-Terrorism Course at Police Training Centre Chakwal, Punjab (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). Trainees had been nominated from the Elite Force and general duty police for counter-terrorism upskilling across the district. They varied in years of police service; most had only a few field deployments. All possessed basic police training, while the course was an advanced counter-terrorism operations program. While the qualitative component comprised post-training trainee interviews, one focus group discussion, and interviews with instructors/experts. Key informants were the training instructors, senior CTD/police officials and subject-matter experts who supervised, observed or evaluated the counter-terrorism training. The quantitative population was police trainees enrolled in the

counter-terrorism course, whereas the qualitative population included trainees, instructors and police training experts connected with the programme.

Sampling was evaluative and non-random by design since we wanted to capture as much data as possible from all participants in this pilot training course. In addition to trainees, the qualitative sample also included 8 instructors and experts. These included the main training instructors, senior officials of the Counter-Terrorism Department (CTD) of Punjab, and subject matter experts who supervised or observed training sessions. In addition to the perspectives of the trainees, these experts were believed to have important insights regarding how the trainees performed and recommendations for how to improve the training program.

Training Program Description: The CT training program evaluated was a 6-week course conducted in two phases (Phase I of 3 weeks plus Phase II of 3 weeks). It was a new version of the local curriculum introduced in 2024, aiming to be more interactive and tied directly to police trainings. The program included key elements like:

Classroom Training: Trainees were trained in various parts of terrorism including the types and categories, extremist ideologies, relationships between terrorist and extremist groups, along with Pakistan's counter-terrorism laws and policies. These were not lectures in the strictest sense of the word. Trainees were asked to write down questions, engage in discussions and relate the course content to contemporary cases of terrorism witnessed today (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). PowerPoint slides and videos on terrorism also made the learning active.

Field Exercises: It covered tactical drills on CQB, building entry and room clearing, first responder after-attack protocols, and improvised explosive devices (IEDs). Phase I (weeks 1–3) covered the basics of tactical movement and weapon handling, while Phase II (weeks 4–6) comprised more detailed scenarios involving hostage situations or coordinated attacks. Simulations were also carried out as full-day mock counter-terror drills in the last week. This involved trainee designing and executing the intervention together with supervision.

Blended learning and assignments: A flex blended approach was followed. Trainees were divided into assigned groups for certain online activities through WhatsApp or online forums, in addition to on-site training activities (Barhoumi, 2015). These activities included case study analyses, such as reviewing historical terrorism events and critiques of responses, and intelligence analysis exercises with a defined data set and/or Open-Source Intelligence (OSINT) tool. This supplemented classroom learning while adding a technology-based angle to collaboration.

Observations and Feedback: During the course, designated observers (instructors/researchers) completed an observation checklist documenting performance of trainees during each drill or simulation. The teams were then debriefed on their tactics, communication, and decision-making following the major exercises. Trainers suggested that trainees keep a "learning journal" to write their reflections at the end of each day of training. This exercise was intended as a means of self-reflection and improvement.

A Thematic Approach: There was an inclusion of positive attitudes toward counter-terrorism as a strategic theme in the curriculum. Frameworks regarding ethical issues, human rights, and the role of civil society were incorporated. For instance, there was a module on the aggressive counter-

terror operational line and the need to maintain legal order and public confidence. Trainers used real operational situations where misuse of operational power had damaged public trust and legal legitimacy. To grasp the greater good of prevention apart from operational force, for example building a vigilant counter-terrorism mindset, trainees were taught about recruitment methods and prevention approaches in accordance with existing security literature (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022).

Yet, these modern elements had drawbacks, which were examined later through interviews: the lack of advanced tools used to train on VR, no more than one short session on cyber-terrorism, and a complete lack of modules that prepared officers for stress. This context is relevant with respect to evaluation.

Instruments and Data Collection: Multiple instruments were used for data collection, as in the mixed-method design. The data collection instruments are described as below:

Quantitative Instruments: Knowledge Test (Pre-test/Post-test): A test was designed in order to assess the awareness of trainees, at baseline and after training, on counter-terrorism methodologies. There were Multiple Choice Questions (MCQs) and short-answer questions on basic terrorism concepts, laws related to terrorism, such as portions of the Anti-Terrorism Act, operational procedures for scenarios, and counter-insurgency tactics. It was peer reviewed by professional people in the area. The pre-test was administered to the fifty trainees, and the same test was repeated in the last week of training as the post-test, after which we were able to infer how much knowledge had improved. The tests used in the analysis were adapted to have scores ranging from 0 to 50. We further analyzed their scores in terms of correct answers, that is, the percentage of correct answers.

Attitude Survey: A Likert-type scaled questionnaire on attitude was administered to measure the trainees' thinking regarding selected key issues related to confidence to manage terror incidents, use-of-force versus community intelligence and collaboration, ethical considerations, bias, and human rights advocacy. Example statements included "I am confident / competent in directing people through a terrorist incident" and "Counter-terrorism cannot be effective without active engagement with local communities." A five-point Likert scale was used, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The participants took this survey both before and after training. This afforded us the chance to see movement in participants' mindsets or disposition, an important affective outcome that is all too often absent from training evaluations. For the analysis, we combined all trainees' responses into one score, the overall attitude score, and reversed the negatively worded questions. A higher score indicated a more positive attitude toward counter-terrorism-related duties.

Observation Checklist (Skills Assessment): A checklist was used for instructors to record observations regarding tactical skill development. Before training began, each individual was given an initial evaluation through a simple exercise, for example reacting to a simulated IED threat, where factors such as situational awareness, communication style, tactical movement, and target accuracy were measured. The observers scored trainees on the above parameters during the 6 weeks, especially at the mid-course exercise (end Week 3) and final exercise (Week 6). The checklist utilized a rating scale of 1 = poor, 3 = satisfactory, and 5 = excellent on different dimensions of the skills. We listed the scores at mid-course and end-course, then averaged them to create an

overall "skill score" per trainee. Note that while this is not a proper "pre/post" test, we used it to quantify the extent of skill improvement occurring through training. For baseline context, informal observations were made, since certain skills could not be assessed without exposure to training; the emphasis was on comparisons between mid-course and final performance.

Demographics and Background Form: Trainees completed information on age, gender, years of service and previous training. This helped to control for nuisance details, for example, in some cases, more seasoned individuals may perform better from the start because they have greater experience. It also helped to give an understanding of gender-based issues.

Qualitative Instruments: Semi-Structured Interview Guide: Following training, we began to conduct in-depth interviews with a stratified sample of trainees (n = 10), including both high- and average-performing individuals and at least 2 female officers, as well as 5 trainers or expert judges. We used an interview guide with open-ended questions to maintain consistency across interviews, such as: What components of training were the most useful or effective? What training-related components can be improved? Did the training boost your confidence in counter-terrorism tasks? How realistic are the counter-terrorism challenges that the training prepares you for? We probed all references to specific events or perspectives, for example, if a trainee described stress, we asked how stress was addressed or not; if an instructor mentioned female trainees, we asked about women's participation.

Focus Group Discussion (FGD): Besides the interviews, one focus group discussion was conducted with 6 trainees after they completed the course. The design of the group discussion allowed participants to share ideas, build on one another's points, and bring out commonalities and differences. The FGD investigated the same topics covered in the interviews, such as strengths, weaknesses, and suggestions, but also gave the group a chance to ask themselves what they would do differently in the next cycle of this course. This gave a useful range of concepts.

Interviews and FGD were recorded with permission from the participants, then transcribed verbatim for analysis. In addition to observing the training sessions, contextual qualitative information was also captured (for instance, records of participants' enthusiasm or notable events during the simulations).

Ethical Considerations: The voluntary nature of the interviews and FGD was explained to the trainees, along with the absence of any negative consequence for non-participation. The transcripts were de-identified. The fully coded anonymized transcripts complied with ethical requirements of human research, including signed informed consent and an avenue for the participant to withdraw from the research at any point. Given the practical and sensitive nature of counter-terrorism work, this was limited to an evaluation of training and did not include operational details. For confidentiality reasons, data were aggregated, and police leaders received feedback consistent with this principle.

Data Analysis: Quantitative Analysis: All statistical analyses were performed using SPSS (Statistical Package for the Social Sciences):

Univariate Statistics: The background characteristics of the trainees and baseline scores were descriptively summarized first. Descriptive statistics were produced to describe the starting measures for average pre-test knowledge scores, pre-training attitudes, and baseline skill ratings. Similar calculations were done for the trained

group after training. This provided initial evidence of progress, for example, showing knowledge gains through an increase from one score to another.

Paired Sample t-tests: We ran paired t-tests comparing pre-test and post-test scores for knowledge, attitude and skill outcomes for hypotheses H1 and the improvement components of H2 and H3 (Field, 2018). In each comparison, the same trainee served as his or her own control. The t-tests were used to show whether the mean differences were statistically significant. The significance level was set at $\alpha = 0.05$. Given the nature of the training, we anticipated a large effect size and planned a priori to report Cohen's d for each outcome.

Correlation: We presented correlations between knowledge, attitude and skill scores using Pearson's correlation, especially after training. This related to Objective 1, the relationship between the domains, and indirectly to H5, which was also captured qualitatively through perceived effectiveness and confidence. For example, we were curious whether changes in knowledge were related to higher skill ratings, or whether an increase in attitude was correlated with performance skill. This gave two correlation matrices, one for variables prior to training and another for variables after training. We found meaningful associations in the results, indicating that cognitive and behavioral domains work together.

ANCOVA Analysis: Considering that the design is not randomized, we used ANCOVA, as recommended by Field (2018), to control covariates and reinforce the improvement tests. We performed an ANCOVA for each outcome, including post-test knowledge, post-test attitude, and post-test skill, using the equivalent pre-score as a covariate. This is similar to accounting for baseline differences while comparing gains. To account for experience, we included years of service and prior CT training experience (yes/no) as covariates. Gender was also controlled to examine interactions, as we investigated differential impacts as part of H3 and Objective 3. Results of the ANCOVA and paired t-test were generally concordant, and adjusted means from the ANCOVA were also reported.

Gender Comparison t-tests: Gain scores, post minus pre, in the domains of knowledge, attitude and skill were calculated for each trainee. Next, we performed independent-samples t-tests contrasting the 40 male trainees and the 10 female trainees for each domain. Since the female sample was small, we added the Mann-Whitney U test for additional robustness. Specifically, we wanted to know whether the training affected male and female trainees differently.

Regression and Exploratory SEM: Using quantitative proxies based on H5, we conducted an exploratory multiple regression examining confidence versus perceived effectiveness. We created a measure of "perceived effectiveness of training" from single survey items in which participants rated the global value of the training. Though subjective, it provided a metric. Regressing perceived effectiveness and attitude score components on self-reported confidence offered insight regarding H5. In addition, the thesis for this article attempted an SEM approach to this problem: the interrelation of knowledge change, attitude change, and skill change by gender (Kline, 2015). The SEM yielded some interesting results, such as no supported path from gender to knowledge gain but a supported path from gender to attitude gain. However, it was over specified and suffered from estimation problems, including negative variance for attitude change, which indicates model misfit. Thus, for this article, we display only the simpler and more statistically robust results, such as

t-tests and correlation, and report separately on the influence of gender on attitudes.

We report all quantitative results with significance levels (p-values) and effect sizes in relevant cases. The data reasonably fulfilled assumptions of normality (following minor transformations for attitude scores). Overall, a quantitative section gives you some evidence on whether the training achieved its goals.

Qualitative Analysis: The qualitative analysis followed the six-phase process of Braun and Clarke's (2006) thematic analysis.

Familiarization: Once the interviews had been completed, the audio recordings were transcribed and the transcripts were read multiple times. We summarized first impressions and identified possible themes, such as strong reception of the modules and stress reported by many trainees.

Code Generation: With the combination of deductive and inductive coding, we identified relevant parts of the text for each research question. Deductive codes were based on relevant questions in our interview guide, including effective component, needs improvement and confidence change, while inductive codes reflected the content of the data. One inductive code found was psychological stress, where many trainees specified that they were not psychologically prepared. The qualitative analysis was performed with QSR NVivo software for code organization.

Thematic Search: The results were summarized by aggregating the main codes into higher-level themes. For example, the main theme of strong theoretical foundation included codes such as good theoretical content, learned terrorist types and clear explanation of CT laws. Under the theme "gap between training and real-life operations," trainees placed comments such as "more drills required," "not realistic" and "practice needed." The categories with their themes were identified as theoretical foundation, delivery that was interesting and interactive, improved confidence, gap between theory and practice, limited organization of the learning process to psychologically prepare trainees for professional roles, lack of cultural and gender sensitivity in the course design, and importance of technology.

Revising the Themes: We re-examined a few of the transcripts to validate that the themes suited each segment of the data, that there were sufficient entries in separate segments, and that they were meaningfully distinct without being redundant. We identified the main themes relevant to this area and dropped those which were not well anchored. For example, "more confident" showed up a lot with other comments and was grouped into a broader theme around professionalism and attitude. All final themes were based on multiple participant quotes.

Identifying Themes: We then defined and scoped each theme and assigned an identifying name to each one. These were: (a) strong gains in theoretical knowledge, (b) effective interactive learning methodologies, (c) improved analytical and critical thinking with hints of attitude or mindset change, (d) lack of practical simulation and the theory-practice chasm, (e) psychological unpreparedness, (f) desire for local context and gender equity, and (g) suggestions for future technology and curriculum improvement. For each theme, we wrote short definitions. Psychological unpreparedness was defined as participants reporting that training did not prepare them for extreme stress, trauma or emotional management in terrorism-related cases.

In the writing up (integration) step we report on what these themes are and support them with illustrative quotes. These themes are either convergent (most officers felt the

same about a specific topic i.e., course content) or divergent (any significant differences e.g., female vs male officers prioritizing relationships to gender use more). Finally, a quantitative analysis is done with the qualitative data for an all-inclusive examination.

We employed strategies such as member checking (discussing summaries of findings with two instructors for verifying our interpretations) and an audit trail of coding decisions to establish credibility in the qualitative analysis. The triangulation of our design – comparing what trainees said with experts observed and crosschecking with quantitative data – also validates the findings.

The combination of this mixed-method and the above methods give us a comprehensive way of answering the research questions. We report the results in two subsections, first quantitative detail on these training details and then qualitative highlights, followed by a unified discussion.

Results: ***Quantitative Results***

The socio-demographic characteristics of the participants are given in Table 1.

Table 1: Characteristics of Participants

Characteristic	Detail reported in the study
Total quantitative sample	50 police trainees
Gender distribution	40 male trainees; 10 female trainees
Training site	Police Training Centre/Police Lines, Chakwal, Punjab
Sampling method	Purposive/evaluative sampling of the pilot counter-terrorism training cohort
Training duration	Six-week updated CT module delivered in two phases
Participant background	Elite Force and general duty police personnel with basic police training; most had limited prior field deployments

Knowledge: There was a statistically significant difference between pre-test and post-test knowledge regarding terrorism and counter-terrorism. Trainees scored an average of 6.30 (±2.1) out of 50 in a knowledge test before the workshops but increased this to a post-test mean score of 19.26 (±4.5) (Field, 2018). In percentage terms, this ranges from 12.6% to 38.5%, so it can be classified as an important improvement, but still with potential for better performance. This was a very large effect size (Cohen's $d \approx 2.9$), indicating that the training had a significant positive impact on trainees' factual and conceptual knowledge of terrorism and response strategies. These results strongly support H1.

The association between knowledge, attitude and skill at follow-up: An interesting finding from this study is the positive correlation found between all variables, meaning knowledge, attitude and skill were correlated measures. At the end of the course, those who performed better on knowledge tests tended to have higher ratings for skills developed and more positive attitudes. Skill and attitude after-scores were also correlated ($r \approx 0.64$, $p < 0.001$). The program had similar effects on knowledge and skill gains for male and female trainees, with no statistically significant gender differences. The increase in positive attitude scores was larger among female trainees compared to male trainees. Female attitude scores were about 12 points higher, and male scores were around 10 points higher. Statistical tests demonstrated that there was a significant effect of gender on improvement in the attitudinal frame ($t \approx 2.9$, $p = 0.005$). This trend was further corroborated in the thesis by SEM analysis, which indicated a beneficiary effect of gender

on attitudinal change (β ≈ 2.1–2.7, p < 0.01) (National Commission for Human Rights, 2018). Hence, in H3, there were improvements for both sexes but female trainees had more mindset and self-esteem boost.

What is also worth pointing out is that knowledge and skill outcomes did not differ by gender. Indeed, the female post-test mean knowledge score was slightly higher than the male mean, regardless of significance (Field, 2018). The finding has important practical implications for police leadership: if female officers perform equally with male officers when training is held constant, then this is evidence against stereotypes about women not being effective counter-terrorism officers and supports more women occupying these positions. The training program was not explicitly tailored by gender, which is why qualitative feedback focused on perceived gender-based inclusivity.

Other Analyses: In the multiple regression on H5, perceived effectiveness versus confidence showed a moderate positive association (β ≈ 0.55, p < 0.01). Trainees who rated the course as highly effective were significantly more likely to report greater self-efficacy for handling terrorism scenarios. This is in line with common sense and the idea that belief in training can support self-efficacy, but we treat it cautiously due to common-source bias because both measures came from the same survey. That still reinforces that subjective perceptions are of value.

Further, the ANCOVA controlling for service years revealed that older and more experienced officers improved in a similar manner to younger ones. Experience did not interact with improvement, implying that veteran officers learned as much as rookies. None of the trainees had much counter-terrorism training background beyond standard police academy training, so that variable had little effect on the results.

In brief, the quantitative results are very promising: of Punjab Police trainees, we achieved substantial changes in knowledge, attitudes and skills. These improvements were noted across participants, most robustly in theoretical knowledge and more modestly but statistically significantly in attitudes/confidence. Skills improved too — although as data suggest bridging theory with practice is an area to continue honing (as skills did not see jumps as dramatic as knowledge and participants themselves indicate the gap). In addition, results emphasize the ineffectiveness of gender to impede organizational training gains; in fact, female trainees may experience more attitude improvement. The numeric outcomes define what changed as a result of the training. The qualitative findings help us know the nature of these changes qualitatively and what gaps still persist.

Table 2: Result Summary

Outcome	Key result with p-value/significance
Knowledge gain	Mean score increased from 6.30 (±2.1) to 19.26 (±4.5); d ≈ 2.9; p < 0.01
Overall knowledge, attitude and skill improvement	Pre/post comparisons showed significant improvement across the main domains; p < 0.001
Skill-attitude association	Post-training skill and attitude scores were positively correlated; r ≈ 0.64; p < 0.001
Gender effect on attitude	Female trainees showed greater attitudinal improvement; t ≈ 2.9, p = 0.005; SEM β ≈ 2.10, p = 0.007
Perceived effectiveness and confidence	Perceived effectiveness was positively associated with confidence/self-efficacy; β ≈ 0.55; p < 0.01

Qualitative Findings (Thematic Results)

This gave more insight into how trainees and experts experienced the training program. Thematic analysis identified three overall themes: (1) Theoretical training and professional/ethical mindset, (2) Interactive pedagogy and practice-based delivery, and (3) Improvement needs for contextualised, psychologically resilient and technologically updated CT training. Relevant sub-themes/quotes are presented below as illustrations. These cover the observed strengths and weaknesses of the program (Objective 4) and recommendations for improvement (Objective 5).

Table 3: Themes and Subthemes

Theme	Subthemes / supporting focus
1. Theoretical training and professional/ethical mindset	Counter-terrorism concepts, laws, terrorism dynamics, ethical conduct, national-security orientation, confidence and CT attitude
2. Interactive pedagogy and practice-based delivery	Blended learning, multimedia, group discussion, field exercises, simulations, observation sheets, journals and the remaining theory-practice gap
3. Improvement needs for contextualised, resilient and technologically updated training	Psychological preparedness, stress management, local/cultural relevance, gender sensitivity, cyber/OSINT exposure, VR/AI tools and standardised resources

Theme 1: Theoretical Training with Clear Fundamentals: "Comprehensive and relevant content." One common view among both trainees and instructors was that the course performed well in terms of counter-terrorism theory. It was acknowledged that the course covered the structure of terrorist organizations to operational cycles, along with legal aspects of counter-terrorism in Pakistan. Moreover, a trainee remarked that *"The training indeed helped me with the theoretical aspect of terrorism and counter-terrorism principles"* (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). Some mentioned taking away new topics, or understanding concepts that were previously confusing. The evaluation was generally positive with one expert calling the content very good and that it was *"well organized and up-to-date on threat trends."* Some trainees pointed to their appreciation of learning about up-to-the-minute issues such as internet-based terror financing and recruitment [emphasis added]. For instance, stated one participant, *"Branchless banking [is a] great learning from [the] online technology-rich instruction concerning terror financing".* Indicating that some sophisticated and hard-core topics found their way into the course. Most of the trainees (based on qualitative interviews) rated their knowledge gain as "good" to "excellent", which is consistent with quantitative data demonstrating that 86% were rated as having a good to excellent knowledge outcome.

Programme Strength/Content integrated with Theme 1: This point is treated as part of the preceding theme on theoretical training with clear fundamentals. It is supported by the preceding participant/expert quotations on comprehensive content, CT principles and up-to-date threat trends, rather than being retained as a separate unsupported theme.

Theme 2: Interactive and Practical-Learning Pedagogy: The third point in favor of the teaching was the interactive style. It seemed that trainees preferred a mix of teaching methods, including lectures with multimedia, group discussion and hands-on activities. They described the teaching style as *"interactive"* and *"not boring ever."* Trainers implemented active learning practices, asking learners to summarize useful training takeaways and maintain a journal of the training itself. Many participants felt that it was in the actual field and simulation exercises that real learning

happened. They said those exercises trounced lectures for muscle memory and teamwork. As one instructor said, the new blended learning model, a combination of classroom, field and online components, provoked more engagement than traditional courses. Overall, the methodology was aligned with adult learning theory as it was interactive and heterogeneous, that is, andragogical oriented. A learning phase was introduced whereby trainees were encouraged to show their participation in the training conducted. However, while the trainees appreciated the few drills, they had experienced, they would not mind having more drills, and that brings us to our next theme on practical gaps.

Theme 3: Improvement needs for contextualised, resilient and technologically updated training: Like many types of interventions designed to close the theory-practice divide, respondents indicated that the efforts were not closing the gap between theoretical construction and real-world operationalization. Trainees acknowledged that boundaries created by a course might not allow for replication of specific characteristics of complex counter-terrorism scenes. The content explains theory and procedural parts very well but knowledge is insufficient regarding real-world operations, as one respondent noted: *"Each face of complex field operation has been lacking in it."* There are even claims made for terror events that involve chaos and very quick decision-making, along with variables that simply cannot be simulated in a small training area. A lot of those who took part requested training as drills and scenarios. In other words, if a large simulation was earlier done once or twice, the trainees were keen to get more mock drills set up based on different scenarios, including hostage situations and bomb threats in public places. One participant said: *"We need more drills where they throw us into a scenario and see if we can actually apply any of the stuff we learned."* The second comment also stated that they did a few exercises, but they felt somewhat scripted, and that more unscripted field exercises over several days might better emulate the investigative process and manhunts. The disposition expresses that we have to build more applicability into the real world. Again, the qualitative feedback corresponds to earlier studies which indicate that practical aspects are related. It elaborates on why quantitative data is rather silent about gains of skills, which were lower or not as pronounced compared to knowledge gains, as trainees perceived lesser practice. Participants attribute the emphasis on experiential learning as the main area for improvement, and this is essential for a practice-led framework such as in our program.

Lack of Psychological and Emotional Training: The biggest weakness mentioned by respondents was the lack of psychological preparedness and stress-related training. This was referred to as the *"critical weakness"* of the training by many. The trainees said they learned tactics and theory but had never been taught how to deal with the fear, adrenaline, trauma, etc. that accompany terrorism. Another trainee said: *"The training had not prepared us psychologically and emotionally. I heard no one talking about how to deal with immense stress or how to keep your head in the game."* Another trainee added: *"We went over so much operational stuff about what a person should do, but nothing about dealing with the stress that life brings your way in this job."* Participants (P1, P2 and P3, as per transcript) specifically requested inclusion of stress management modules (McCraty & Atkinson, 2012; Andersen et al., 2015), including fear management, high-stress simulations, emotional debriefs, tactical breathing and mental drills. *"In the real world, panic can*

kill you or others — we need training to help keep a level head." Instructors are aware of the gap, as they have focused on physical and cognitive skills whilst neglecting psychological training (due to time constraints). And this is an important and telling one because it indicates a noticeable and usually neglected deficiency in police training – especially since counter-terrorism situations can be particularly gruesome or high-pressure. This also integrates with literature on the importance of training in developing psychological resilience and readiness (McCraty & Atkinson, 2012; Andersen et al., 2015). Hence, a major recommendation (that will be discussed further) focuses on incorporating training for mental readiness into the curriculum.

Contextual and Cultural Relevance: Participants indicated that the training curriculum should be better tailored to local context and culture. Some viewed certain modules as too generic, or poorly adapted international manuals. Trainees also identified methods that rested on an urban infrastructure that most of the Punjab lacks, as well as scenarios built around international terror groups that left local extremist dynamics--such as sectarian groups or regional insurgencies--less thoroughly explored. Another participant summed up this lack when he said, *"the training is lacking in local, district, and regional cultural challenges of greater consequences."* Respondents P2, P3 and P4 emphasized the incorporation of contextualization in their modules for instance how to operate from one locality that enough local social/community norm does not allow police presence or used regional languages/dialects which are also used by the terrorists. It was also highlighted that there had to be cultural sensitivity and understanding with local people, particularly through counter-terror operations. The trainees indicated that the need for training on culturally sensitive communication, particularly in rural areas. This was not the primary issue, but it depicts a necessity for revision to fit Pakistan's multifarious sociocultural context. This aligns with literature indicating that beneficial training necessitates consideration of context.

Gender Sensitivity: Female and some male trainees said the training approach was not sufficiently female-friendly. The training material was not gendered, and some trainees from the focus group said the experience of female trainees was largely ignored. Some exercises were built around male trainees and were therefore harder for female trainees to complete. More importantly, female trainees felt that the course did not address the counter-terrorism roles performed by female officers. A female trainee expressed that the course did not discuss how a lady officer could be used in CT and intelligence, even though female officers can be deployed for community engagement with female suspects, especially in conservative communities. Male trainees also noticed that in some instances female trainees were left out of some aggressive simulation exercises. This was not policy-led but seemed coincidental; still, it left the impression of peripheral integration. Trainees indicated that the training modules should be amended with regard to female trainees (National Commission for Human Rights, 2018). They asked for equal opportunity in all activities and also suggested separate discussion of the challenges women officers face in the field. The key message is that legitimate and purposeful training should include gender balance both in content and practice. This concern is applicable to Pakistan where female representation in the security forces is significantly low, and it also fits the literature on gender-sensitive training (National Commission for Human Rights, 2018).

Technological Improvement and Modernization: A suggestion from the participants was to integrate more modern technologies into the training. PowerPoint presentations and videos were somewhat used, but advanced technologies like VR or interactive training simulators were not available. VR, AI and other more modern technologies remain less explored. This would not only close the theory-practice gap, but also make training more effective. It is better to suggest VR training as a response to terrorist incidents (for example, an immersive scenario of a building under siege) that is effective and safe. They also believed there was a lack of cyber intelligence training, particularly given the digital dimension of contemporary terrorism (social media monitoring, dark web intelligence, etc.), and highlighted the need for expansion in this area. A trainee observed, *"OSINT latest tools or models required exposure or practical instead of one odd lecture only"* meaning he had a lecture on open-source intelligence tools but no practical exercises. In accordance to the PVE policy (National Counter Terrorism Authority, 2024), trainees and other experts suggested that sophisticated tools and training aids should be purchased for their implementation in future trainings. In their interviews, Instructors acknowledged being resource constrained, but argued that low-cost tools such as scenario simulation software or decision-making interactive modules could provide incremental value. This theme is basically arguing to upgrade existing and open new training infrastructure; terrorists weaponize technology in many sophisticated ways, and so the imperatives of training environments being more realistic both could and should be better served.

Enhanced Professionalism and Self-Confidence (Outcome Assessments): In general, every trainee had some particular likes or dislikes, but overall, there was an increase in feelings of professionalism and self-confidence because of the course. Several participants noted that they no longer reported a feeling of being transformed in knowledge, but also in comportment, disposition. The phenomenon would be called "CT attitude," and they said that the training had transformed their thinking. Increased alertness and action orientation manifested when one participant said after the training she would *"start mentally rehearsing"* how to respond to a potential or immediate threat within her environment. Besides qualitative reflections, and the fact that course participants described themselves as better prepared, these also indicated changes in attitude. The course also provided a broader, more holistic context of counter-terrorism that made trainees feel more prepared overall, thus reducing their anxiety. A course participant also observed that trainees exhibited far more discipline and took greater initiative to the degree they would answer when they were empowered, as opposed to earlier in the course where their demeanor was passive. Self-empowerment, the most important tangible outcome of the course however was also complemented by officers experiencing what it means to be a CT cadre contributing for good which should produce positive outcomes on officers' work quality. They humbly also acknowledged that the course was merely a start – over and over again people said something like, *"We learned a lot but it will take tons of practice; this is just an intro to really get these skills."* This means you might require additional training (perhaps refresher courses or advanced modules in future).

That means extra training may be needed, maybe some refresher courses or advanced modules in future. In summary, the qualitative findings paint a mixed picture: the content and more interactive delivery of this training program was valued, and it achieved

its primary aim of increasing trainees' knowledge and confidence. Participants also identified gaps: more involvement in practical scenarios, psychological resilience and casualty case management, adaptation to local and gender environments, and technology usage. These themes not only confirm the patterns in the quantitative results, for example explaining why increased skills were less than desired because more drills will be needed, and also explaining attitude gain because some female trainees entered with low exposure and their confidence grew, but also expand the narrative space to include other considerations that a test focus would miss, such as stress management. Next, we combine and interpret these findings in light of training theory and previous studies.

Integration of Quantitative and Qualitative Findings: Bringing together the quantitative and qualitative results provides an overall view of what works well within a training program and where there is room for improvement. The triangulation of findings produces an internally consistent narrative, with the two strands of data supplementing one another on significant elements:

Trainee Knowledge and Theory: Gains in knowledge, with scores showing a clear increase, were a major outcome. In the qualitative results this is also borne out through the theme of strong, in-depth knowledge construction, supported by individual participant testimony. The post-test knowledge scores matched participants' own views that they had gained awareness of terrorism dynamics and counter-terrorism concepts. This verifies the prior knowledge gap of the participants and shows how the course helped close that gap. Also, the participants' self-assessment of their knowledge improvement, with most rating it as good or excellent, reflected the growth in test scores. This confirms the usefulness of the knowledge test for measuring that part of the curriculum.

Better for Attitude/Confidence: Positive changes in attitudinal data were statistically significant. In interviews and focus groups, trainees described their confidence and stated that more attention to the ethics and community dimensions helped build a new CT mindset. Qualitative data also support the quantitative finding that female trainees improved attitudes more than male trainees did. The greater attitude score seen in female trainees, in spite of previously lower levels of participation, was attributed to the reported increase in female empowerment and inclusion after the course, although there was still concern regarding further representation. Male trainees also reported higher levels of professionalism and motivation. Trainees were mostly positive about conducting community engagement in the surveys, and interviews suggested that CT trainees valued discussions of community policing.

Skill Development and Practical Gaps: This is a more sensitive gap. The data, in reality, showed that skills had improved but nothing like as much as knowledge. Qualitative themes describe a harsh reality: the practicality of simulation had limitations both in quantity and fidelity, and trainees acknowledged this. A reason why skill ratings were better after training but not perfect is the theory-practice gap. Results indicated that trainees did benefit but suggested they were still not sufficiently prepared for the "complexities of fieldwork." The relationship between knowledge and skills ($r \approx 0.62$) could suggest that those who learned more also applied the skills. It means that the delivery model, theory plus practical work, generated more benefits for some than others. Some wanted more drills, so they could feel confident. And that is where the difference between knowledge and skill makes sense.

Correlation and Reinforcement of Domains: The most salient point was that the post-training knowledge, attitude, and skill outcomes were all intertwined, especially during the interviews. Participants described how knowledge influenced their attitude and better attitude motivated them to use skills. The quote, "the training has been critical not only in providing CT skills but also the appropriate CT attitude," represents the confluence of the two dimensions. The strengthened correlation between post- and pre-training reflects the role of simultaneous integrated learning. Participants also reported that during the most recent simulation they were able to see how all learned components came together. The interviewers noted that participants who appeared academically sharp also seemed to roll the skills more fluidly, reflecting the interplay of the dimensions. The integration demonstrates the significance of a training design in which cognitive, affective and behavioral aspects are dealt with simultaneously, since success in one area can promote another.

In context — bridging the differences: Data linkage provides new scope for richer gender analyses. Other than for attitude, gender differences in outcomes were minor quantitatively. However, qualitatively, female trainees reported that the program did not reflect their perspective. How do we reconcile this? Although the program was not designed with a gender-specific objective, it appears that female trainees performed well in training. They caught up to their male peers, maybe because of greater opportunities for tactical exposure, in knowledge and skills, but exceeded them in attitudinal growth. Because the training motivated female officers, and because the short course was so novel for many of them, this improvement in performance is not surprising. On the contrary, qualitative data indicated that more gender-sensitive training, including female-specific roles and potential biases, could further support female trainees. It is also positive, from a practical point of view, that the program produced no biased outcomes in knowledge or skill. But it is still important to hear from female officers themselves, so as to further assure their success and retention. The take-away synthesis is that the training was effective across gender but needs to improve in making the learning environment for women more inclusive.

Psychological preparedness — a silent quantitative gap: From the beginning of the training program, some measurement focused on psychological readiness, but the lack in this aspect was not really a methodological gap; it was a qualitative void. None of the trainees indicated that psychological preparedness was being adequately measured, since the quantitative tools focused more on knowledge, skill, risk attitude, and confidence. An integrated evaluation of qualitative and quantitative data therefore reveals an outcome that would be left in the shadow of one-dimensional measurement. The questions did not include a direct way of measuring trainees' ability to cope with stress, and this qualitative aspect was addressed mainly through interviews. Trainees identified a need for more training in that area. In other words, without some measure related to knowledge of stress management, composure control, or pressure control, the evaluation remains limited. Incorporating psychological readiness would therefore be an evaluation lesson for future training. The integrated result shows that participants' statements can extend the assessment beyond pure numbers.

Overall Effectiveness Perception: Across both datasets, the verdict is that the training was effective in addressing its main aims. Trainees rated the training well (qualitative sentiment) and felt better

prepared (quantitative), which matched up with the objective improvements recorded. The high relationship between perceived training effectiveness and confidence (quantitative) is consistent with interview data where many trainees explicitly attributed their increased confidence to the course. Together, these lines of evidence point to a successful program but with some needed improvements.

Findings: The findings, collated around scenario-based training, show that skills can improve further. Psychological resilience training was found important across interviews but lacking in the training, so it requires inclusion as a new element. Psychosocial technology and local contextual adjustment to policing practice also came through in the qualitative data. Gender imbalance is another area to target with more urgency so the success with female officers is maintained and gender inclusion becomes stronger. There is also evidence for longer duration training or follow-up refresher training, expressed by trainees themselves, who said more practice is necessary, and supported by literature on spaced training and retention. None of our quantitative measures explicitly measured retention, but qualitative concern about the lack of longitudinal assessment indicates a missing ingredient in future evaluations and training design. Long-term follow-ups or on-the-job tracking are needed to ensure that training effects do not remain only at Level 1 and 2 (Kirkpatrick & Kirkpatrick, 2006).

In summary, combining quantitative and qualitative results leads to a multi-faceted validation of the outcomes of the training program and illuminate drivers and requirements for the future. Quantitative data determined that the immediate objectives of the program had been achieved (knowledge, attitude and skills improvements), while qualitative data provided colour to those numbers and offered a partial explanation of why they improved, including more practice and more psychologically focused components. The collective story from the combination of both forms of data is that tactical and analytical skills training for Punjab Police trainees was significantly enhanced, creating a stronger cognitive framework and approach. But to achieve optimal results, the program should be fine-tuned to include stress conditioning, realism and some professional development modules. The significance of these implications is spelt out in the following section, where the project is placed within a broader context of training theory and practice.

Discussion: This study endeavours to examine the impact of a police counter-terrorism training program and tactical and higher-order cognitive development among police trainees. Results demonstrate that a robust observational component in mixed-methods evaluation can divulge very detailed information on what a training program is succeeding at and what it is struggling with. We contextualize our findings within existing training theories, compare with previous research and speculate on practical implications for training practice and policy.

The most important positive outcomes, meaning gains in knowledge, skills, and attitudes, indicate realization of the first two levels of Kirkpatrick's training evaluation model: reaction and learning (Kirkpatrick & Kirkpatrick, 2006). Level 1 is partly achieved because, although trainee satisfaction was not measured using a formal instrument, the high levels of overall satisfaction, engagement, and specific comments provided by trainees, support this. Test scores and skills assessments demonstrated progress at Level 2, meaning learning, with substantial improvements.

The program works within cognitive learning, meaning knowledge acquisition,

and behavioral learning, meaning skills trained in a specific context. Another evidence of positive impact on attitudes can likewise be understood as affective learning. In Kirkpatrick language, this may also relate to Level 3, behavior, because attitude change can spill over into on-the-job behaviors, for example being more proactive and more ethical. The ideal measure for Level 3 is on-the-job performance after training, which was not involved in our study. More often, positive attitudinal change together with self-reported confidence and stated intention may lead to behavioral changes, but a field follow-up is needed to confirm the training's impact on police work. Level 4 Kirkpatrick outcomes, such as improvement in public safety metrics or lower response times, are beyond the scope of our study. More specifically, our study contributes to Kirkpatrick's model by also obtaining outcomes on gender, which step outside the more traditional confines of the four levels.

Considering that female trainees could obtain equal or even greater benefits in some aspects, we included what can be termed as a contextualized part in the training evaluation, which resonates with the recommendation to include diversity and inclusion in the assessment of training impacts (National Commission for Human Rights, 2018).

Findings confirm andragogy should be included in police training. The test results and qualitative feedback demonstrate the effectiveness of a problem-oriented, experiential training where participants were highly engaged and retained substantial understanding. According to Knowles, adult learning is best when it is self-directed by the learner and relevant to their day-to-day responsibilities. The trainees demonstrated significant motivation to support their positions and illustrate the relevance of the case studies to their practice (Knowles et al., 2015). This was not surprising as participants in the study immediately expressed enthusiasm for the practical drills and interactive activities, which would support our assertion that grounded training design recognizes and meets these needs. Without the experiential interactive methods there is no way a traditional lecture-based presentation would have resulted in the same impact or reception. The data suggests that a combination of the andragogy and experiential learning principles was critical to the success of the program.

This aligns with Kolb's experiential cycle, where trainees experienced concrete experiences (simulations), reflected on those (debriefs / journals), distilled those reflections into abstract concepts (theory-linked discussions) and then engaged in active experimentation again (subsequent drills). This cycle could have offered learning reinforcement, which may account for the strong relationship between knowledge and skill outcomes. Like Kolb theorizes, a combination of experiential learning and reflective learning leads to better understanding, which in this case means knowledge becomes skill.

Participants felt that the gaps in theory and practice still need to be identified. While the program attempted this, trainees felt that more could be done to enhance realism and replicability in a real-world environment. This fits with a common theme in the literature related to training law enforcement and military personnel: achieving realism that positively affects transfer of training is almost always difficult. Training environments that are too sanitized and removed from work reality may limit Kirkpatrick Level 3, meaning transfer of training into behavioral change on the job. Trainees wanted more realistic scenarios, and there is documented benefit in improving transfer of training into the field. For

example, research on police and crisis training suggests that complexity of scenarios and exposure to stress during training can predict performance by inoculating trainees to real-world pressure (McCraty & Atkinson, 2012; Andersen et al., 2015). Graduates from our program reported a lack of uncertainty and stress in the simulation environments. More high-fidelity crisis simulation, role players portraying insurgents or hostages, munitions simulation, and time-stressed scenarios should be included. Another way of building quick thinking would be to incorporate Red Team exercises, where instructors plan unexpected obstacles.

Performance improvement in stressful conditions is an established part of educational gains, especially in what the military calls stress exposure training. The recommendation from this discussion is that future versions of the training should feel much more like real life and the day-to-day complexity of disorder, preparing officers for the chaos of events that unfold in the real world. This probably means an expansion of the budget, but even modest improvements, such as drills at night or in a crowd as if on a public street, would help.

The identification of psychological preparedness as a critical missing element should not be ignored. Another characteristic of adult learning theory is the use of adults' past experiences and encouragement of self-reflection. Stress management and emotional resilience could be taught with a focus on stressors that officers themselves have experienced in a coping context. Related items from the Trans-Theoretical Model (TTM) also matter: trainees can be at different levels of readiness for calling out and addressing traumatic stress. This may include raising awareness about stress, teaching practical techniques, role-playing stress situations, and suggesting social support such as peer counseling and mindfulness. Failure to do so means the training may fall short of advancing the fear and trauma perspective transformation in Mezirow's terms (Mezirow, 1991). In simple terms, officers need to feel that they can emotionally interface with and control stress, not just understand it intellectually.

The trainees identified this hiatus themselves and requested it, an advanced concept in adult pedagogy whereby they self-diagnose a learning deficit. For training designers, this is useful: add in EI; add in critical incident stress debrief (or possibly slides assessing the coping strategies of veteran officers or a non-trainer temp version); short units on mental health self-care or even anxiety/panic. These results support the proposition that discussion at a local level, given global attention to officer wellness (including PTSD prevention). Rizvi (2022) We know from the literature (Abi Fadel, 2021; Rizvi, 2022 – both cited in this thesis) that officers trained to be psychologically resilient are better and less subject to overreaction. It is therefore logical to suggest that adding this component will further enhance the performance outcomes at Level 3 (calm trainees and increasing effectiveness in the critical incident).

Considering the significant increase in positive attitudes, notably around community engagement and ethical issues, requires comparison with similar counter-terrorism programming. Many counter-terrorism initiatives can encourage an us-versus-them and militaristic mindset. In contrast, this initiative attempted to bring community policing and human rights into the discussion. If the surveys and interviews are to be believed, trainees became more accepting of community engagement as part of effective counter-terrorism. This has an important spillover: the training was not only creating more technically trained officers, but also officers who thought more about ethics,

community and legitimacy. In terms of adult learning and transformative learning, this may represent a change in perspective and may help create officers as reflective practitioners. This is in line with CVE literature, which calls for community engagement and education as important parts of prevention (National Counter Terrorism Authority, 2024).

Such officers may benefit in the long run. Building sustained relationships with locals might help them gather more useful information that could make counter-terrorism operations better in the longer term than just through training numbers and other metrics. So, a very definite take-away is that if we are to have practitioners who are balanced counter-terrorism professionals, training in normative and ethical aspects is both doable and effective.

The finding of equal performance between female officers and male trainees, along with larger self-reported increases in confidence among females, sends a strong message that high-quality training under equal conditions enables women to compete equally with men in CT and male-dominated domains. This is in line with the position of gender advocates that women face more barriers related to access or lack of support than inability. The experience of our female trainees, that the training content was not made for them and yet they succeeded, suggests there is additional gain to be had if training were tailored for women in policing where such content makes sense. Other aspects include modules devoted to the roles of female personnel in intelligence gathering, for example their ability to access certain people or locations in sociocultural conservative environments where women are permitted but men are not, and employing female trainers for such modules.

These findings are consistent with Naz and Abbasi (2021), as they also suggested better and increased gender-sensitive capacity building to improve police performance (National Commission for Human Rights, 2018). Additionally, as expressed by the gender effect in attitude, greater initial concern, perhaps from stereotype threat or role ambiguity, may have been reduced through success after training and resulted in a greater difference. At the training design level, this reinforces creating an inclusive environment with similar levels of psychological safety across gender, so all trainees feel confident and unrestrained to contribute. Future iterations might benefit from honestly incorporating the involvement of women in CT, maybe with a case study through women's perspectives or an invited female police speaker. This would probably maintain and build on the attitudinal gains.

The trainees' demand to incorporate Virtual Reality (VR) and other technological tools in their education speaks to the nature of a new generation of learners, as well as the context of contemporary education. Similar tools are increasingly used by military trainers and law enforcement across the globe because they provide a realistic yet safe setting for practice. The possible advantages of recent tools in training can be viewed as solutions to some of the challenges raised in discussion: VR training addresses the real-world training gap by providing immersive experiences; some VR scenarios provide a means for training directly in response to a stressor; and they can standardize delivery across multiple sites through the same hardware or software configurations. With regard to the first aspect, the importance of technology as well as psychosocial aspects in capacity-building training design has been recognized by studies consistent with our findings (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). The challenge is in the use of technology within Pakistan, and it may start with

simulation software or simple tabletop exercises. Even our beneficial knowledge effects from PowerPoint and videos suggest that other educational technologies may also produce benefits. Moreover, the need for continuous training can be supported through an online portal or simulation game that participants can access after the course.

At a higher level, the positive results of this pilot evaluation have policy implications for law enforcement training in Pakistan. It illustrates the value of evidence-based evaluation of training. Even at the hands of police, many trainings may have been conducted without rigorous evaluations, as discussed in our introduction. The work we present is designed to be a reference for how to regularize and improve the training protocol. This should perhaps instill a sense of motivation in police leadership and policy makers (e.g. NACTA — National Counter Terrorism Authority) to weave evaluation into the very fabric of training rollouts. More specifically, these findings suggest a roadmap for curriculum improvement, including the following: —Greater focus on hands-on and scenario-based learning, likely requiring investments in infrastructure or time for drills; —Inclusion of mental health and resilience training modules; —Coverage of local content as well as physical and soft facets of outcomes, in essence engaging local domain experts in course design; —Emphasis on gender inclusivity and diversity aspects embedded into the structure of training components, which could potentially increase the appeal of such courses to female officers and bolster recruitment/retention efforts targeting women within CT roles; —Adoption of content formats aligned with the larger framework of national policy delivery.

As we close our analysis, it should be emphasized that these same problems can be used to improve this program and provide guidelines for best practices for other specialized police training programs, such as crime investigation and special weapons and tactics.

Future Research and Limitations: To do an adequate analysis, it is necessary to deal with the real issues. One-group pre-post designs are probably the most common type of training evaluation design, but they limit causal inference. It could be that external variables, an unarticulated variable, or even the Hawthorne effect, where trainees adjust their performance because they know they are being observed, also influenced the changes. Still, the use of different metrics and the qualitative feedback from trainees, who themselves attributed change to the training, gives some support to the findings. Future assessments may include a control group, such as similar groups who did not receive updated training or who received only an abbreviated version. The sample is contextual as well: 50 trainees of Punjab in this case. Making generalizations is difficult and the findings should not be overstretched across Pakistan because of the localized and small sample. However, the consistency of findings with training principles that were already well understood provides some measure of conceptual generalizability. Immediate outcomes at completion of the course were also assessed. Retention and transfer into deployments may be identified in a 6–12 months follow-up study. This could include Level 4 outcomes such as response times or intelligence gathering, although impact studies are complicated.

Finally, embedding this work in the literature on the evaluation of security training would complement the discussion. It appears to be one of the first in-depth evaluations of a counter-terrorism police training program in Pakistan. Consequently, it occupies the research gap highlighted in the introduction on CT training within lesser developed countries that are less well-

researched. This acts as an example of how local need can be used to tailor global best practice (adult learning, Kirkpatrick model etc.) such that the enhancement is measurable. It might encourage more scholars to research and write about police training in tough contexts, thus diversifying the literature.

Conclusion:

Finally, the present study demonstrates that police counter-terrorism training can affect large improvements in the tactical and analytical skills of trainees, including over a very short period of time. A 360-degree insight into the possibility of training being truly effective in the context of Punjab Police comes from the concurrent triangulation between one-group pre/post analysis and qualitative inquiry.

The training impacts were significant: improved awareness of the nature and recent history of terror threats; greater understanding of laws regulating responses to terrorism and strategies vital for counter-terrorism; practical skills development, including improved reactive and proactive tactical response skills, as well as better inter-agency coordination; and better attitudes in terms of establishing an effective counter-terrorism culture based on professionalism, confidence, and community orientation. These were quantitatively corroborated and further supported through participants' reflections. Importantly, the program was effective for male and female officers alike, indicating that the training effectively equalizes an environment that can sometimes favor men over women in police work, a useful sign for welcoming females into policing.

Scenarios and recommendations: The study also pinpointed gaps. Based on our findings, the potential for achieving real-world impact from training success can be increased through the following recommendations.

Scenario-Based Training: Train as you would in the real world, and simulate as many real details as possible. New concepts ought to provide more varied, flexible and realistic simulation drills for vivid terrorism incidents. It will put the trainees under time pressure to apply what they have learned and make sure that it sticks as a long-term skill. In this context, using technologies like VR or interactive simulation systems can be a force multiplier because they create immersive scenarios that traditional exercises are not able to reproduce.

Psychological Resilience Modules: Train officers on long-term stress management, making decisions under pressure, and dealing with trauma. Given the above results and our group findings, with respect to psychological domains that seem a weakness of the program (McCraty & Atkinson, 2012; Andersen et al., 2015), it is necessary to incorporate modelling techniques: breathing and visualization techniques, scenario stress inoculation, and even peer support talk. Training the mental and emotional faculties as well as tactical skills will complete the tactical prowess of officers who have to deal with asymmetric warfare.

Enhance Local Relevance and Customization: Update and localize the content to align with the local threat landscape, norms, and culture. The matrix encompasses case studies of local phenomena, regional balances such as urban versus rural issues of terrorism, and culturally sensitive content in community outreach delivery (Institute for Economics & Peace, 2025; Pak Institute for Peace Studies, 2022). The training must convey to trainees that it is genuinely addressing the environment they will be entering into.

Gender Inclusion During Training: Female officers should be included at the table in all training scenarios through rotation regardless of gender, and topics should be relevant to issues faced by women serving on the force during exercises. Examples of how women can be included in the process include using simpler and more positive measures, for example, including female role players when intelligence is collected or modifying a training drill to permit teams containing both male and female officers (National Commission for Human Rights, 2018). In addition, female trainers or mentors may be role models to decrease any unintentional bias.

Long-run monitoring and performance assessment: We recommend that the police department create systems for identifying people who participated in the course, providing refresher trainings, and assessing their on-the-job performance. Future trials should evaluate the longitudinal durability of training effects and whether trainees are applying their enhanced skills and knowledge in genuine counter-terrorism scenarios. This might involve follow-up surveys or evaluations between 6–12 months after training, and/or input from trainers on how the trainees translate learning into practice. The long-term nature of this assessment will assist in moving to Kirkpatrick Level 3 and Level 4 evaluation, that is, behavior change and results respectively, and then assess if this training does deliver improved security outcomes (Kirkpatrick & Kirkpatrick, 2006).

Finally, the study confirms that mixed-methods evaluations are necessary for the overall picture of training across settings. The quantitative results provided solid evidence for improvement, while the qualitative insights told us which human factors contributed to those numbers and pinpointed where we could improve. Finally, this research offers an evidence-based recommendation to policy makers and training developers in Pakistan and other analogous settings: investing in modern adult learning approaches to law enforcement capacity development is worthwhile. Identified gaps can help make the counter-terrorism training program more effective in preparing police officers by devising drills, including psychological conditioning, adapting to context, and making it inclusive.

At the end of the day, a well trained and equipped police force is any nation's best weapon against terror. Training models must innovate and should constantly be evaluated as terrorism also changes. These results contribute to the evolution of this issue, highlighting that advanced terrorism training involves much more than imparting knowledge or skill. It is about building adaptable and resilient practitioners to counter multifaceted threats against society. Using research like this is one example that should serve as a seed for the continuous improvement of regional counter-terrorism capability development, with the Punjab Police counter-terrorism training program as a practical example.

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Declaration Section

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