

# A Randomised Controlled Trial of the Effects of Positive Psychology Interventions on the Well-Being of Police Officers in India

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**Abstract:** Building on past positive psychology interventions, the current study developed an Arm of Hope (ARM) (i.e., accomplishment, relationships, meaning, health, optimism, positive emotions, and engagement) positive psychology intervention based on the theory of positive policing. Using Seligman's PERMA model (i.e., pleasure, engagement, meaning, positive relationships, and accomplishment), the current study added health and optimism to determine whether an ARM intervention improved the well-being of police officers. Using simple random sampling, 300 officers working in the District of Panchkula in the State of Haryana in India were asked to be part of the study, and 224 agreed. Officers were randomly assigned to either the experimental or control group. At the end of the study, officers in the experimental group had a statistically significant improvement in well-being compared to those in the control group. Future research should test the effectiveness of the positive psychological intervention with officers in other nations.

**Keywords:** Police; Well-Being; Positive Psychology; Law Enforcement; India

## Introduction

In recent years, the fields of psychology and law enforcement have each explored distinct but interconnected avenues with the overarching goal of enhancing the well-

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being and performance of individuals. Psychology, which historically concentrated on addressing mental illnesses and dysfunctions, has now progressively broadened its objectives to include positive psychology (Synder *et al.*, 2020). Psychology now encompasses the study and cultivation of human talents, as well as the quest to make “relatively untroubled” individuals happier, aligning with the core principles of positive psychology (Ryff, 2022). Positive psychology interventions have emerged within this framework, presenting a versatile set of interventions aimed at creating positive outcomes and elevating well-being (Seligman, 2004).

Simultaneously, the realm of law enforcement encompasses a diverse spectrum of responsibilities. As Goldstein (1977) emphasised, police officers are tasked with controlling serious crimes, aiding individuals in danger, maintaining traffic order, resolving conflicts, identifying societal issues, and fostering community security; however, the challenges they face extend well beyond these duties, with the prevalence of job-related stress becoming a critical concern (Gershon *et al.*, 2009; Kurtz, 2011). The well-being and optimal performance of police officers are of paramount importance, as they represent the most significant and costly resource for police agencies (Qureshi, 2022).

This juxtaposition of psychology’s focus on positive psychology and law enforcement’s imperative for officer well-being forms the backdrop for the current study. Recent research has indicated that positive psychology interventions can effectively increase well-being, as evidenced by recent independent meta-analyses (Bolier *et al.*, 2013; Carr *et al.*, 2021; Donaldson *et al.*, 2019; Hendriks *et al.*, 2020; Sin & Lyubomirsky, 2009). The reviewed positive psychology interventions spanned a diverse array of psychological constructs, including gratitude, hope, goal-attainment, compassion, and humour, and often employed varied techniques. Nevertheless, it’s noteworthy that many positive psychology interventions do not explicitly adhere to a theoretical framework or directly target specific components of well-being theory.

Incorporating a theoretical foundation into well-being interventions offers numerous advantages. Theoretical frameworks, as highlighted by Michie *et al.* (2018), enable the derivation of hypotheses directly from the theory and allow findings to be interpreted within their context. Additionally, they permit a comparative assessment of the efficacy of different well-being components within an intervention. Notably, this approach aligns with an individual’s unique well-being profile and preferences,

potentially enhancing the effectiveness of the intervention (Proyer *et al.*, 2014, 2015; Senf & Liao, 2013).

The current study has two goals. First, we aim to replicate and extend the findings of Giannopoulos and Vella-Brodrick (2011) regarding the effectiveness of well-being interventions based on the relationship between positive psychology and well-being. Among adults, the effects of four positive psychology interventions (pleasure, engagement, meaning, or a combination) and orientations to happiness on well-being are important. For example, Giannopoulos and Vella-Brodrick (2011) found that all four positive psychology interventions raised the level of well-being among those in the experimental groups as compared to the control groups. The current study involves a carefully designed, randomised, placebo-controlled study. Specifically, the current study explored the application of positive psychology interventions in the unique context of a police agency. By doing so, we seek to contribute valuable insights into the potential of positive psychology to enhance the well-being and performance of law enforcement officers. This study embodies the convergence of psychology's pursuit of well-being and the imperative for officer well-being in the realm of law enforcement, promising to shed light on an intersection that holds significant promise for improving lives and professional performance.

## Literature Review

### *Well-being*

Well-being, a central term in philosophy and psychology, signifies what fundamentally benefits an individual. It holds particular significance in moral philosophy, notably within the framework of utilitarianism, which places the highest moral imperative on maximising well-being (Diener, 1984). Well-being is the state of being comfortable and happy resulting from more positive than negative emotions and refers to a general overall satisfaction with life (Ryff & Keyes, 1995). The field of psychology and related disciplines has proposed various conceptualisations of well-being (e.g., Keyes *et al.*, 2002; Ryan & Deci, 2001; Seligman, 2002, 2011). Although there is no consensus on the specific components of well-being, most theories encompass elements of subjective well-being, such as life satisfaction, positive emotions, and indicators of psychological well-being linked to optimal functioning.

Well-being includes subjective well-being, which involves negative affectivity, positive affectivity, and life satisfaction. Diener and Suh (1997) defined well-being as consisting of three interrelated concepts of pleasant affect, unpleasant affect, and life satisfaction. Diener, Emmons, Larsen, and Griffin (1985) indicated that positive and negative affect “refer to the affective, emotional aspects” of subjective well-being, and life satisfaction refers to the “cognitive-judgmental aspects” of subjective well-being (p. 71). Diener and Emmons (1984) conducted a seminal study revealing that trait measures of positive and negative affect tend to be largely unrelated, meaning that one’s propensity for positive affect does not significantly influence one’s experience of negative affect. Subjective well-being includes life satisfaction and its hedonic component, and these aspects are typically correlated in most populations (Diener *et al.*, 2000).

Three primary theories of well-being are hedonism, desire theories, and objective list theories (Fletcher, 2013; Prinzing, 2020). Hedonism theory asserts that well-being arises from the balance of pleasure over pain. This perspective has historical roots in the works of figures like Socrates and Protagoras and was articulated by more recent scholars like Jeremy Bentham (Bramble, 2016; Fletcher, 2013; Raibley, 2010). Desire theories posit that happiness results from fulfilling one’s desires, regardless of the intensity of pleasure. This framework is flexible, as it accommodates a variety of individual desires (Lin, 2022; Mariqueo-Russell, 2023). Objective list theory, as articulated by scholars like Nussbaum and Sen, contends that well-being transcends mere feelings and is achieved by pursuing a list of inherently valuable pursuits. This list can encompass a wide array of elements, including career accomplishments, friendships, freedom from suffering, and other valuable pursuits (Anand, 2005; Rice, 2013). The precise definition of well-being remains a subject of ongoing philosophical discourse, with these diverse theories offering distinctive viewpoints on the matter.

### *Authentic Happiness*

In authentic happiness theory, Seligman (2003) draws from the above conceptualisations of well-being and holds that there are three distinct kinds of happiness: the pleasant life (pleasures), the good life (engagement), and the meaningful life. The first two are subjective, but the third is at least partly objective and lodges in belonging to and serving what is larger and more worthwhile than

just the self's pleasures and desires. In this way, authentic happiness synthesises all three traditions: The pleasant life is about happiness in hedonism's sense. A good life is about happiness in the sense of desire, and a meaningful life is about happiness in an objective sense (Seligman, 2003).

Peterson *et al.* (2005) developed the orientations to happiness questionnaire to assess the endorsement of these three orientations. The orientations to happiness scale is frequently used in research (e.g., Pollock, 2015; Ruch *et al.*, 2014; Von Culin *et al.*, 2014). Later, Seligman (2011) proposed a revision, the well-being theory, which comprised the five elements of well-being: pleasure, engagement, meaning, positive relationships, and accomplishment, thus developing the acronym PERMA.

### *The Theory of Positive Policing*

Optimism and health need to be considered for a comprehensive understanding of well-being. Optimism is a state of mind where there is an anticipation of positive results for oneself or others (Snyder, 1994). Human endeavour often involves seeking answers which lead to solving problems. Optimism would not only keep up the drive for consistent work but also help to alleviate any symptoms of depression or feeling low. Optimism has also been linked to mental willpower, as well as the need for a realistic perception of goals (Bernecker *et al.*, 2017).

Health in positive psychology is looked at as an asset. A health asset produces better health, over and above risk factors for disease. Positive health seeks to discover which specific health assets produce longer, healthy life, and which health assets lower disease risk and health care costs. Apart from physical health, psychological health assets (e.g., positive emotions, life satisfaction, optimism, life purpose, social support) are prospectively associated with good health (Seligman, 2008).

A comprehensive understanding of well-being for police, therefore, includes the seven dimensions of an Arm of Hope. The theory of positive policing was developed by integrating all seven dimensions of well-being (Qureshi, 2022). These dimensions can be used to develop strategies and interventions for effective police functioning. The incorporation of health and optimism components is particularly notable considering the unique challenges faced by police personnel. The demanding and often dangerous nature of their work, coupled with societal pressures and constraints, places them in a high-stress context. The Arm of Hope techniques

introduced in this study address these distinct challenges and aim to promote not only emotional and psychological well-being but also physical health and resilience.

### *Positive Psychology Interventions for Police Personnel*

Positive psychology interventions refer to tools which are used to increase happiness, well-being, and positive cognitions and emotions. Positive psychology interventions are designed to boost positive feelings, positive thoughts, and positive behaviours (Carr *et al.*, 2021; Donaldson *et al.*, 2019). This results in higher levels of performance both at the level of individual police officers and at the department level. Several exercises based on positive psychology interventions have been suggested in the positive psychology literature (Jain & Qureshi, 2022).

Police organisations should invest in the well-being of officers (Lambert *et al.*, 2023). A police officer who can successfully face the challenges of a rapidly changing world needs to be equipped with the right kinds of psychological tools. The well-being of a police officer should pave the way for a safer, happier, and thriving society (Jain & Qureshi, 2022). Positive psychology can help reach this goal. The theory of positive policing believes that seven elements can help people work towards a life of fulfilment, happiness, and meaning. Under the Arm of Hope model, these constructs can be modified and used to develop programs and tools for individual officers as well as police departments for building a professional, effective, and humane police force.

Writing therapy can be an effective tool to reduce stress and improve well-being. In individuals who have experienced a stressful event, expressive writing can have a healing effect (White, 2002). Participants who wrote about their most traumatic experiences for 15 minutes, four days in a row, experienced better health results (Baikie & Wilhelm, 2005). Another study tested the effects of writing among patients; participants who expressed stressful events in their lives through writing experienced better health evaluations related to their illness (Joplin, 2000). Regular writing can also help the writer find meaning in their experiences, view things from a new perspective, and see the silver linings in their negative experiences. It can also lead to important insights about the self and immediate environment (White, 2002).

Positive psychology research suggests that an important factor in human flourishing is building close relationships with others. We all want and try to have

healthy, balanced, and positive relationships. This requires hard work. One successful way that we can work towards building bonds is through positive psychology (Bolier *et al.*, 2013). According to Pawelski (2018), positive psychology within a relationship allows people and communities to thrive. They recommended four necessary habits required to build and maintain strong and balanced relationships: 1) Promoting a healthy, non-obsessive passion; 2) Cultivating and prioritising positive emotions; 3) Taking time to mindfully savour experiences together; and 4) Seeking out strengths in one another.

Relationships are vital in living a healthy social life. Humans have an innate desire to connect with others and share experiences and emotions (Peterson, 1999). The concept of community policing requires police departments to have strong ties with the communities they serve (Lambert *et al.*, 2021). Relationships are strengthened by reacting positively to other people. When citizens feel that police genuinely care about them and are interested in solving their problems, citizen trust in police will increase. Having deep and lasting relationships can help police officers personally, as well as the department and society at large.

Developing positive relationships at the workplace is also important. Dunbar and Garud (1998) suggested that when individuals experience social pain in the workplace (e.g., from feeling isolated), the region of the brain that is activated is the same as if physical pain had been experienced. Better relationships lead to deeper understanding and shape citizens' attitudes towards police officers (Qureshi *et al.*, 2017). When relationships in the workplace are characterised by cooperation, trust, and fairness, the reward centre of the brain is activated, which encourages future interactions that promote employee trust, respect, and confidence (Geue, 2018). Policing requires officers to work together (Lambert *et al.*, 2021). Finally, positive social interactions at work directly affect the body's physiological processes. According to Heaphy and Dutton (2008), positive social interactions serve to bolster physiological resourcefulness by fortifying the cardiovascular, immune, and neuroendocrine systems through decreases in cardiovascular reactivity, strengthened immune responses, and healthier hormonal patterns.

### ***Better Policing Through Improved Well-being***

Social interactions in the workplace have been found to increase self-reported positive feelings at the end of the workday (Sandstrom & Dunn, 2014). When

these positive interactions occur repeatedly, they cultivate shared experiences and the gradual development of more trusting relationships (Schilke *et al.*, 2021). Successful policing involves teamwork, and help is required not only from various quarters within the police organisation but also from other departments. Positive relationships encourage cooperation and create synergy (Bolier *et al.*, 2013). This leads to higher levels of police effectiveness. Increased well-being is likely to result in effective discharge of the duties a police officer is called upon to do. A study found that police administrators should attempt to lower job stress and increase job involvement, job satisfaction, and organisational commitment among officers to raise their life satisfaction, which, in turn, should benefit the individual officers, the police agency, and the community being served (Lambert *et al.*, 2021).

The present study aligns with previous research by Giannopoulos and Vella-Brodrick (2011) and Gander *et al.* (2016) in demonstrating the positive effects of well-being interventions among specific occupational groups.

### *Hypothesis*

Following one week of engagement in the relationship, positive psychology intervention, participants will exhibit a statistically significant increase in their well-being scores compared to their initial baseline scores.

## **Methods**

### *Trial Design*

The present study is a randomised controlled trial (RCT) and uses a parallel design. The randomisation process in a parallel-design RCT ensures that participants are evenly distributed across the groups, making it easier to compare the outcomes of the treatment between the groups. This minimises the risk of bias or confounding variables that could affect the outcome. Parallel design RCTs have also been used to evaluate the effectiveness of interventions for mental health conditions. For example, a parallel-design RCT was used to evaluate the effectiveness of cognitive-behavioural therapy for post-traumatic stress disorder (PTSD) in children (Cohen *et al.*, 2004). Another study used a parallel-design RCT to evaluate the effectiveness of mindfulness-based cognitive therapy for depression (Kuyken *et al.*, 2008). In another study, a parallel-design RCT was used to test the effectiveness

of a community-based health intervention in improving maternal and child health outcomes in rural India (Tripathy *et al.*, 2010). A parallel design RCT was used to evaluate the impact of a microfinance intervention on women's empowerment and household decision-making in rural India (Banerjee *et al.*, 2015).

### *Study Participants*

For the current study, participants were chosen from the police personnel posted in District Panchkula, in Haryana, a state in the northern part of India. There were 1,073 police personnel posted in District Panchkula at the time of the study, of which 709 were constables, 122 Head Constables, 135 Assistant Sub Inspectors, and 78 Sub Inspectors. There were 106 (9.9%) female police officers in the District of Panchkula, including 62 Constables, 12 Head Constables, 19 Assistant Sub Inspectors, and 8 Sub Inspectors. A sample size of greater than 100 participants for each intervention was estimated to detect small effects. Three hundred participants were sampled using the list of all officers maintained by the District of Panchkula with a simple random sampling design. A random number generator was used to generate 300 random numbers from 1 to 1073 (i.e., the number of officers), and the 300 officers corresponding to the randomly generated numbers were asked to participate in the study. Of the 235 officers who responded, 9 were excluded for not providing informed consent, and 2 were excluded for being under psychotherapeutic treatment. A total of 224 officers agreed to participate in the current study, which is a response rate of 75%.

### *Interventions*

The study tested the effectiveness of the positive psychology intervention in improving well-being. Two kinds of questionnaires were designed, which were identical except for the intervention condition. One listed the experimental condition and the other the control condition. The positive psychology intervention used as the experimental condition in the current study required an officer to find a place where they could reflect on the day's events. The officer had to recall an interaction during the day where they had a positive experience with other people, such as citizens, fellow officers, or family members. The officer was to write down two such experiences and describe how they felt. The control condition (placebo) required the participants to write down their daily experiences and describe how they felt. In both control and

experimental conditions, the length of the writing could be a few paragraphs or a page. A journal or an electronic device was used for writing. The writing was not to be shown to anyone else and was just for the participant to write and experience.

### *Outcome*

For the current study, well-being was the outcome. Psychological well-being is a multifaceted construct that can be measured through a variety of scales. The satisfaction with life scale (Diener *et al.*, 1985) is a commonly used scale that measures an individual's overall life satisfaction. The positive and negative affect schedule (PANAS) measures positive and negative affect, which are components of psychological well-being (Watson *et al.*, 1988). The structure of psychological well-being by Ryff and Keyes (1995) measures the six dimensions of well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The World Health Organisation Quality of Life Assessment is another widely used scale that measures an individual's overall quality of life (The WHOQOL Group, 1998). Keyes (2005) investigated axioms of the complete state model of health by examining the relationship between mental illness and mental health, which is an important aspect of psychological well-being. Peterson *et al.* (2005) developed the orientations to happiness questionnaire to assess the endorsement of the three orientations of pleasure, positive emotions, and meaning. For well-being, Seligman (2011) measured the five PERMA elements. The theory of positive policing incorporated extra elements related to health and optimism into the PERMA model, resulting in a broader and more inclusive concept of well-being, which is especially pertinent to the demanding work environment encountered by police personnel. The demanding nature of their work, coupled with societal pressures and constraints, places them in a unique high-stress context. This addition resulted in a scale to measure the Arm of Hope that was used in this study (Qureshi, 2022). It is a 21-item scale that measures the seven dimensions of well-being: accomplishments, relationships, meaning, health, optimism, positive emotions, and engagement. Each dimension is measured by three questions. The items used to measure the seven dimensions are presented below.

**Accomplishment:** 1) How often do you feel that you are making progress towards accomplishing your work-related goals? 2) How often do you achieve the

important work goals you have set? and 3) How often are you able to handle your responsibilities?

**Relationship:** 1) To what extent do you get help and support from co-workers/friends when you need them?; 2) To what extent do you feel appreciated?; and 3) How satisfied are you with your relationships?

**Meaning:** 1) To what extent is your work purposeful and meaningful?; 2) In general, to what extent do you feel that the work/study you do is valuable and worthwhile?; and 3) To what extent do you feel that there is a sense of direction in your life?

**Health:** 1) In general, how would you say your health is? 2) How satisfied are you with your current physical health? and 3) How is your health compared to other people of your age and gender?

**Optimism:** 1) In uncertain times, I usually expect the best results; 2) I am always optimistic about my future; and 3) I always hope that things will go my way.

**Positive Emotions:** 1) How often do you feel happy?; 2) How often do you feel positive?; and 3) To what extent do you feel satisfied?

**Engagement:** 1) At work/study, how often do you get absorbed in your work/study? 2) To what extent are you excited and interested in your work/study? and 3) How often do you do something that you enjoy?

The seven well-being elements were measured before and after the intervention. Well-being was measured by adding all seven components of the Arm of Hope scale. The variable well-being was found to be normally distributed, as found from the Kolmogorov-Smirnov test of normality, as well as using the Shapiro-Wilk test.

### *Allocation Sequence Generation and Participant Enrollment*

The allocation sequence for this randomised controlled trial was generated by an independent statistician who was not directly involved in the day-to-day conduct of the study. This process ensured the allocation sequence's randomisation. The allocation sequence was concealed from the researchers responsible for participant enrollment. Participants were sent the survey packet by randomly assigning one of the two conditions. This was achieved using the IBM SPSS package, which has two pseudo-random number Mersenne Twister generators. Participants were enrolled in the study by a team of research assistants who were trained in the study's protocols and procedures. These research assistants conducted the initial screening

of potential participants, explained the study's objectives, obtained informed consent, and collected baseline data. Their role in participant enrollment was crucial in ensuring the study's methodological integrity.

### *Assignment to Interventions*

Assignment of participants to interventions was carried out in accordance with the allocation sequence generated by the independent statistician. Of the 224 participants who responded, 113 were assigned to the experimental condition, and 111 were assigned to the control condition. The allocation was performed by another team member, distinct from those involved in the enrollment process. This individual was blinded to the identities of the participants. Double blinding was followed while assigning the participants to the two groups. The participants did not know to which group they were assigned. The researchers also did not know about the assignment of participants to the treatment and control groups. The participants were assigned randomly to the experimental group and the control group using a random assignment algorithm. Double blinding helps ensure a study's internal validity.

### *Study*

The participants were sent a survey packet that contained an informed consent form, a cover letter explaining the study, the baseline survey, and a return envelope. The baseline survey consisted of questions on demographics and measured the baseline for well-being. The back method of translation was used, wherein survey materials were translated into Hindi, the national language of India, and then a second scholar translated the survey back into English to determine whether there were any translation problems. The cover letter explained the study, indicated that participation was voluntary, indicated that respondents could stop taking the survey at any time or could skip any question, noted that responses would be kept confidential, and provided directions on how to return the informed consent and the survey. Officers were allowed to take the baseline survey at a time and location of their own selection. A total of 224 baseline surveys were returned. The experimental and control group participants were informed not to discuss the study with one another. The participants were asked to do the well-being exercise for one week and then complete the post-test well-being survey. Completed surveys were returned in an unmarked envelope included in the survey packet.

### *Data Analysis*

The primary outcome of interest was the well-being score for participants, and the analysis included the examination of correlations before and after the intervention for both the control and experimental groups. Pearson correlations between the well-being scores before and after the intervention were examined for both the control and experimental groups. Additionally, the paired sample t-test was employed to assess the statistical significance of changes in well-being scores before and after the intervention. These statistical methods were applied systematically to assess the effectiveness of the intervention based on the Arm of Hope technique in enhancing the well-being of police employees. Using an intention-to-treat analysis protocol, the results of all participants are evaluated together based on the group they were assigned to, regardless of whether they finished the study or received treatment outside the study's guidelines. The intention-to-treat protocol is generally preferred because it maintains the advantages of randomisation. Participants who drop out or receive treatment outside the protocol may differ from those who complete the study as intended.

### **Results**

The descriptive statistics of the participants are presented in Table 1. The average participant was a man in his late thirties who was married and had seven years of education. A little less than one third of the participant police officers held the rank

**Table 1: Descriptive Statistics of Participants**

<i>Variable</i>	<i>Description</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SEM</i>	<i>SD</i>
Age	Age in years	25.1	55.2	38.6	0.73	7.6
Gender	90% male (coded 0), 10% female (coded 1)	0	1	0.1	0.03	0.3
Marital Status	95% married (coded 0), 5% unmarried (coded 1)	0	1	0.05	0.02	0.21
Rank	30% Ct (coded 0) 27% HC (coded 1) 33% ASI (coded 2) 9% SI (coded 3)	0	3	1.22	0.09	0.99
Education	Measured in years	3	12	6.7	0.36	3.7

*Note.* Min stands for minimum value, Max for maximum level, Mean for arithmetic mean, SEM for the standard error of the mean, SD for standard deviation, Education for educational level, Ct for constable, HC for head constable, ASI for assistant sub-inspector, and SI for sub-inspector.

of constables (line staff who did not supervise other officers, which is equivalent as patrol officer in the U.S.), slightly more than a quarter held the rank of head constable (i.e., equivalent to corporal in the U.S.), a third held the rank of assistant sub-inspector (equivalent to sergeant in the U.S.), and about 10% held the rank of assistant inspector (equivalent to lieutenant in the U.S.).

The well-being scores before and after the intervention for the experimental and control groups were calculated. The pretest well-being mean for the control group was 22.28, with a standard deviation of 3.85, and the posttest well-being score was 21.99, with a standard deviation of 3.70. The pre-test well-being mean for the experimental group was 22.31, with a standard deviation of 3.70, and the post-test well-being score after the intervention was 23.88, with a standard deviation of 4.22. Paired t-tests were calculated, and the results are presented in Table 2. The paired t-test did not reveal any significant difference between the well-being values from before and after the intervention in the control group ( $t = 0.56$ ,  $p = .58$ ). The paired t-test for the experimental group showed a statistically significant positive impact on the well-being score of the participants before and after the intervention ( $t = 2.88$ ,  $p \leq .01$ ), which supports the hypothesis that an Arm of Hope intervention was associated with increased well-being for the participating police officers. While not reported in tabular format, an independent t-test was calculated to determine if there was a statistical difference in posttest scores between the control group and the experimental group. The experimental group posttest score was higher than the posttest control group score, and this difference was statistically significant ( $t = 3.47$ ,  $p \leq .01$ ).

**Table 2: Paired t-Test Results for the Well-Being Scores for Control and Experimental Groups Before and After the Intervention**

<i>Group</i>	<i>Before Mean</i>	<i>Before SD</i>	<i>After Mean</i>	<i>After SD</i>	<i>df</i>	<i>t Value</i>
Control	22.28	3.85	21.99	3.70	106	0.56
Experimental	22.31	3.70	23.88	4.22	106	2.88*

*Note:* SD stands for standard deviation and *df* for degrees of freedom.

\*  $p \leq .01$

## Discussion

While previous interventions were grounded in Seligman's PERMA model (Seligman, 2011), the current study integrated additional components of health and optimism drawn from the theory of positive policing. The incorporation of

health and optimism components is particularly notable considering the unique challenges faced by police personnel in India. The demanding nature of their work, coupled with societal pressures and constraints, places them in a high-stress context, and the well-being of officers needs to be addressed. The current findings of this randomised controlled trial provide significant insights into the effectiveness of the self-administered intervention based on an Arm of Hope technique derived from the theory of positive policing in enhancing the well-being of officers. This study not only confirms but also extends the results of previous research by Giannopoulos and Vella-Brodrick (2011) and Gander *et al.* (2016) in the field of well-being interventions. Moreover, it marks a significant milestone as the first study to evaluate the effectiveness of well-being interventions specifically among police officers. Furthermore, the use of a randomised controlled trial design enhanced the rigour of this research. By employing randomisation, this study minimised selection bias and established a strong causal link between the intervention and the observed improvements in well-being. This methodological choice provides a solid foundation for future studies seeking to replicate and build upon these findings.

The current findings support an Arm of Hope measure. The Arm of Hope measure of well-being introduced in this study addresses these distinct challenges and aims to promote not only emotional and psychological well-being but also physical health and resilience. This innovative approach represents a significant contribution to the field of positive psychology interventions. The intervention should be tested in police agencies in other districts and states in India and also in other nations to determine whether the results can be replicated. If so, then the intervention may be used to aid in enhancing the well-being of police officers.

### **Limitations**

First, the sample of 300 police officers was drawn from the District of Panchkula in Haryana, India. This could restrict the generalizability of the findings to the broader population of police officers in both India and the world. There may also be regional biases that might not apply to other states in India or in other countries. Additionally, the duration of the study was relatively short-term, which may not capture the long-term effects of the intervention. Additional studies with police officers in other districts in India and in other nations are needed to determine if the effects of the intervention are universal or are contextual, varying by location. While

attempts were made to standardise the positive psychology intervention, variations in implementation across different police units in the District of Panchkula could have introduced bias. Moreover, the self-reporting required by the Arm of Hope scale is sensitive to recall and response biases. The study faced challenges in terms of the diversity of the participants. The vast majority of the participants were married men. The effects of the intervention may differ between different demographic groups of police officers. These are reasons why replication studies are important.

## Conclusion

This study provides evidence of the effectiveness of the positive psychology intervention of an Arm of Hope to improve the well-being of police officers, at least those participating in the current study. The Arm of Hope model was derived from the theory of positive policing, which focuses on the well-being of police officers. One of the most significant contributions of this research is the introduction of an Arm of Hope scale to measure well-being, which builds upon existing well-being interventions grounded in Seligman's PERMA model (2011). Using officers from the District of Panchkula, the results of the current study indicate that the well-being of police officers improved from the tested intervention, adding to the literature that positive psychology interventions can improve the well-being of people, including police officers who have demanding jobs. Including health and optimism components of positive psychology with PERMA presents a promising avenue for improving the well-being of police officers. Future research endeavours should build upon the current findings, expanding the understanding of well-being enhancement strategies for those committed to upholding law and order in challenging environments.

## *Declarations*

**Funding:** The study had no outside funding

**Disclosure Statement:** The authors report there are no competing interests to declare

**Data Statement:** The data used for the current study are available by contacting the first author

**Ethical Statement:** The current study followed ethical standards and was voluntary. The current study had human subjects' approval. The study followed all ethical principles and had informed consent from the participating police officers.

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