

The efficacy of Evidence- Based Policing: Analysis of EBP practice and perception in the response officer role, and key comparative areas within policing, through multi-variate and holistic analysis.

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Abstract

There is a significant amount of academic research available that address the benefits and value in evidence-based policing. Where the research base lacks, however, is in academic analysis of 'actual' police officer use and involvement with this policing model. With a glaring gap in research on actual police officers and staff efficacy of evidence-based policing, this research project was designed to explore this underexplored area of policing academics. A specific focus is put on response officers here, with a comparison to the wider force. This research analysis identifies participant knowledge, confidence, frequency of use, and perceived value as the core aspects of identifying efficacy within this policing model. Trends between these factors emerged. Of note, A multi-correlation coefficient is identified and presented in the data, with positive and negative trends in one variable affecting all three. Further to relationships of data, this research identifies a persistent negative perception of EBP from response officers, when compared to other participants. However, this is reversed when response participants also identify as belonging to either the PCDA or DHEP entry route. These participants show the highest perceived value of EBP and present the best definitions of it. When analysed by department alone, those who identified as belonging to the Protecting vulnerable people department show the highest overall comprehension and practical use of EBP principles. This research is extensive, using an eclectic research model to cover as many valid areas of research as practicable. The research findings are compared to existing literature for an inferential comparison. This research may benefit from repeated application across larger samples of populations and across multiple forces.

Keywords: *police,*

Introduction

Evidence-based policing is a widely accepted model of policing within England and Wales, being fully adopted into the College of Policing framework (College of Policing, 2024). There is significant research in this area of study. However, there is a significant lack of research covering the actual use of evidence-based policing within response and frontline policing departments. Specifically, the efficacy of evidence-based policing within the response and frontline roles. This manuscript develops the evidence base within this knowledge gap, analysing this research against the relevant existing literature to enable an inferential analysis of this topic. This manuscript is sectioned for the reader to access the hypothesis core to this research, outlining the framework of research and objectives. Followed by the literature review of relevant studies and the methodology applied here. Then an analysis of the data used, A discussion section, critically analysing the hypothesis, research purpose, objectives, and further discussion points of note. The manuscript is then summarised in the conclusion. The bibliography and appendices can be found in the final sections of this research project.

Hypothesis

“Evidence-based policing is potentially underutilised in practice. It is not effectively used by response officers within this force, nor does any area of service effectively use EBP.”

This research aims to address the hypothesis, identifying the efficacy of evidence-based policing within the response role, comparing it against other areas of service. The research questions whether police officers and staff have an effective understanding of EBP and apply it to their respective roles, with a particular focus on response officers.

Research Objectives

- Identify the knowledge levels of EBP within the response.
- Compare this to other areas of service.
- Analyse any variables that impact EBP knowledge.
- What are the perceived confidence levels using EBP within the force?
- How does this compare between different areas of service?
- Analyse what areas use EBP in their respective role.
- How does this compare to the response?

- Analyse what barriers prevent participants from using EBP.
- Understand what participants feel would increase confidence levels.
- Identified desire or need for further training in EBP?

Literature Review

There is a significant amount of research focused on the value of evidence-based policing (Sherman, 1998; Sherman, 2013; Lumsden, 2018; Fleming and Wingrove, 2017); (College of Policing, 2024). However, the pragmatic application of this core policing model, its efficacy and uptake by front-line police officers is less defined by research.

Willis and Toronjo (2023) present evidence-based policing as the future of developing policing practices and policies. Citing evidence-based practices as the most significant reform in policing over the last thirty years. Promoting the value of EBP, Piza and Welsh (2022) state that the approach allows for police officers to utilise a scientific method in investigations, presenting innovative experiments in what works with managing crime. Further, Piza and Welsh (2022) present the notion that police are increasingly taking up the practice of EBP.

Evidence-based policing is in the spotlight for the prime role in transforming police practices and draws the value of researching policing (Lum and Koper, 2017). There is a clear demand for EBP uptake. Heaton and Tong (2016) acknowledge a significant need for a willing uptake of this model across academic and police institutions across the UK. This lack of uptake can undermine the value of EBP. It is seen here that various accredited academics hold a shared view that evidence-based policing has significant value in modern policing.

However, there are areas for development identified in evidenced based policing practices. Palmer, Kirby, and Coleman (2019) express that the vast majority of those surveyed knew the concept of EBP through a shared understanding or use of the phrase 'what-works'. Palmer, Kirby, and Coleman (2019) outline that higher-ranking officers, particularly inspectors, highly value EBP practices and are more likely to utilise academic research. However, officers of constable rank were less likely to use EBP resources. Specifically, frontline officers showed a valuable experience over

academic qualification or corroboration. Frontline officers held a lower perception of value for EBP within their role. Further, police staff roles showed a higher preference towards taking up EBP practices compared to frontline roles. Palmer, Kirby, and Coleman (2019) suggest two factors for the comparative uptake of EBP between senior roles, staff, and frontline officers. Given the strain and type of work that comes to frontline officers, there may be more subjective approaches taken, rather than viewing the wider picture. Officers may be less inclined to adopt these evidence-based practices due to sheer demand. Secondly, a resistance to change. Palmer, Kirby, and Coleman (2019) acknowledge a reluctance to change in operational frontline police work, identifying a need for another police reform, particularly around police cultures. This would potentially be a significant factor in changing frontline perceptions on the value of EBP. Motsamai and Kishore-Raga (2022) reflect this, stating that police reform should be focused on evidence-based policing, as it allows for the force to identify what works in not just strategy but policy and internal hurdles to allowing for an effective reform. The EBP approach can be applied to police reform itself.

Palmer, Kirby, and Coleman (2019) show a division between roles and incorporation of EBP practices, but it is important to acknowledge the limitations of this study. As this was published in 2019, the global and national health crises may have played a role in officers' ability to use such approaches, further as this study was conducted on a single force, corroborative studies may be needed to expand on research validity and reliability. Rogers, Pepper, and Skilling (2022) are reflective of this, showing that frontline police officers are not engaging with Evidence-based policing practices within their role. There is more value held by those in higher positions within the police. In contrast with Palmer, Kirby, and Coleman (2019), who demonstrate a deeper understanding of what evidence-based policing is within police roles, Rogers, Pepper, and Skilling (2022) state that few frontline officers truly know the principles of what evidence-based policing is, and the chain of command does not provide support to adopt EBP principles. This comparison of research shows a potential variation in concept knowledge across forces. Rogers, Pepper, and Skilling (2022) present the key reason for a lack of EBP uptake is the lack of support within the policing framework at a front-line level. Rogers, Pepper, and Skilling (2022) acknowledge that student officers, those entering the police from the modern degree-based entry routes, present a significantly higher knowledge of EBP and hold more

value in these practices. This study proposes that student officers are potentially becoming more knowledgeable about EBP; however, more research is needed to identify if this is consistent and why this may be the case (Pepper and Skilling, 2022).

The idea that more support is needed from the chain of command to incorporate EBP into frontline work is stated by Selby-Fell and Newton (2022). This study addresses the issues with organisational support, listing the key organisational constraints identified as limited awareness of, and access to, research evidence, lack of resources, capability concerns, and challenges in organisational culture and leadership (Selby-Fell and Newton, 2022). These restrictions are most notably felt by frontline officers, receiving the least support regarding EBP practices (Selby-Fell and Newton, 2022).

Heyer (2022) shows a repeating trend in the study. While most officers understand what evidence-based policing is and are amenable to its adoption and use, the methods that agencies use to communicate and disseminate information internally were inadequate, and the current organisational structures cannot support evidence-based practice. Comparatively, the research discussed presents conflicting arguments around officers' understanding of EBP but agrees that organisational support and structure are key issues for the efficacy of EBP with frontline officers across the UK.

As acknowledged by Brown et al (2018), there is little evidence to identify if evidence-based policing has developed the police services' use of resources or crime prevention strategy any better now than thirty years ago, due to a significant lack of research in this area. This is seconded by Heyer (2022), stating that few studies have addressed the cost-saving or strategy development benefits of incorporating EBP. Although the research on EBP is extensive in terms of its 'potential' value, there is limited research on its actual impact. With this research gap present, it is even less likely for research on the specific area of front-line EBP efficacy to be conducted. Significant to this research project, Palmer, Kirby, and Coleman (2019) acknowledges the study aims to be a benchmark for further data analysis, due to there being extremely limited data on police officer values and uptake of evidence-based policing. As discussed, there are research gaps into how and why front-line officers use EBP. It is due to these limitations in research that this primary research project is presented. Comparative data across forces of practical EBP use within frontline roles and wider

departments needs to be analysed for a more comprehensive understanding of what changes, reformations or approaches are needed to better utilise EBP practices.

To summarise, EBP is an essential part of modern policing, but there is limited data to display if front-line officers are incorporating EBP into their roles, and the available research expresses that EBP remains underutilised, held back by a lack of definition and integration within police culture. Potentially underutilised in specialist areas due to a lack of a cohesive framework with professional partnerships. The research conflicts in officers' understanding of EBP in general but does acknowledge that staff roles and supervisory roles use or value EBP more than frontline officers. A resistance to change within the frontline may come from a series of different aspects; more research is needed to identify why this is. One point shared within research is that police structure and cultures prevent EBP from being effectively incorporated into police practice. Further, a Lack of research has been identified by recent studies. Key areas being general analysis of the impact on EBP's incorporation into the police framework, with most studies looking at 'potential' rather than its active impact. The minimal research on a comprehensive understanding of frontline use of evidence-based policing is significant to the research, which aims to bridge the research gap presented.

Methodology

Design

This study takes an eclectic approach to research design. Through using a mixed methodology survey, qualitative and quantitative data have been analysed, and a positivist view of the data as well as an interpretivist analysis has been conducted. Specifically, this research uses multivariate and bivariate analysis to assess relationships, correlations, and observations between multiple data variables within the quantitative data. This allows for the data to not just be presented but for conclusions to be drawn and inferences to be made against the results and existing literature. Descriptive methods are incorporated where data results cannot conclude on discussion point. This survey was structured as 35 questions. All questions are directed at the participants' policing background and understanding of evidence-based policing. The questions were designed to be easily read and comprehended, to minimise misinterpretation, preventing leading or suggestive questioning. The questions are mixed as dichotomous, open questions, and questions formatted on the seven-point Likert

scale. The use of language was selective and simplified to minimise confusion from participants and to not presume a high reading skill requirement.

Participants and Procedure

This survey was conducted on select police force/s in the United Kingdom with a population of 2,800 (N=2,800). Including all participants, the research Sample size was 82 (n=82). Through the data cleaning process, all participants who were outliers, invalid or answered question seven incorrectly (Define EBP) were removed from the quantitative dataset completely, segregated from the general data in the qualitative data set. The survey was live from the 9th of September 2024 and closed on the 12th of October 2024.

Full Sample = 82 participants

Population = 2,800 within specified force/s (number rounded to aid with anonymity of participating forces)

$$(100\%)/(X\%) = 2800/82$$

$$\Rightarrow X = 2.93\%$$

Sample pool 'n' represents 2.93% of population 'N'

$X/N = R$ (Representative value of N)

$$R = 2.93\%$$

Valid Sample = 74 participants

Population = 2,800 within specified force/s (Exact number not disclosed to aid anonymity, exact population is within 100 of the population size)

$$(100\%)/(X\%) = 2800/74$$

$$\Rightarrow X = 2.57\%$$

Sample pool 'n' represents 2.57% of population 'N'

$X/N = R$ (Representative value of N)

$$R = 2.57\%$$

This research was conducted through a single survey hosted on the JISC surveys platform. Manual analysis of data and themes, JISC analysis software, SPSS software, and NVIVO systems were used. The dataset was sanitised addresses for outliers.

Data was assessed and presented as tables to present normality.

Results

Qualitative Analysis Report:

Qualitative data was analysed manually for codes, themes and relevance to the research purpose. This was then analysed against the full dataset. Core themes were observed.

“Can you please briefly define Evidence-based policing EBP?” – Respondents had stated recurring themes, defining EBP as:

Collecting/ Referring to/ Using: “Best available evidence”

Using/ Incorporating: “research”, “Data”, “Statistics”, “Academics”, “What works”

To effect: “Policies”, “Practices”, “Decisions”

Within: “Policing”, “Local issues”

For: “Strategic policing”, “Tactical Policing”, “Better Policing”, “develop Evidence Base”

Continuation: “Scientific methods”, “Test”, “Analysis”

Incorrect answers to this question (7 participants) were analysed for themes. Recurring theme and definition of EBP:

Using: “Evidence”, “Best available evidence”

For: “Supporting a criminal case”, “Evidence lead prosecution”, “Investigation”

Due to: “Unsupportive victim/s”, “Investigation is evidence-based”.

All incorrect answers share the same central misunderstanding of the EBP definition.

Regarding knowledge of EBP, participants expressed views on the value, confidence, and application of EBP within their respective roles and experiences. They presented their opinions on training. As the qualitative data presented in the discussion section does not rely on extensive context to decipher, there is no need to expand on it within this section.

Quantitative Data Analysis/ Results

All the data presented were analysed using SPSS (version 28.0.1.0). The data used in this report has been cleaned, with the removal of outliers, incorrect answers, and invalid data. The data presented are inferential statistics using the appropriate significance and Parametric tests where applicable. A multivariate analysis method is seen throughout this section and the discussion section, comparing and analysing multiple variables. Key analyses have been broken down into 'areas of analysis', outlined below.

Area of analysis 'Department compared to Knowledge of EBP' represented in *Table 1*

Knowledge of EBP by department

		Do you know what EBP is?						Total	
		Yes		No		Not sure			
		N	%	N	%	N	%	N	%
Department	Response / LRO	15	23.8%	1	25.0%	0	0.0%	16	21.9%
	Neighbourhoods	14	22.2%	1	25.0%	1	16.7%	16	21.9%
	Prevention - Local Policing	0	0.0%	0	0.0%	1	16.7%	1	1.4%
	Central intelligence services	1	1.6%	0	0.0%	0	0.0%	1	1.4%
	Collaboration units	2	3.2%	0	0.0%	2	33.3%	4	5.5%
	Crime CID	13	20.6%	0	0.0%	0	0.0%	13	17.8%
	Force Control room (Including CMIU)	0	0.0%	1	25.0%	0	0.0%	1	1.4%
	Human Resources	3	4.8%	0	0.0%	0	0.0%	3	4.1%
	Operations Department	3	4.8%	1	25.0%	0	0.0%	4	5.5%
	Proactive Crime and Intelligence	4	6.3%	0	0.0%	2	33.3%	6	8.2%
	Protecting Vulnerable People	8	12.7%	0	0.0%	0	0.0%	8	11.0%
Total		63	100.0%	4	100.0%	6	100.0%	73	100.0%

Table 1

Only department's Crime/CID, Human resources, and protecting vulnerable people show all participants have valid knowledge of EBP (Figure 1).

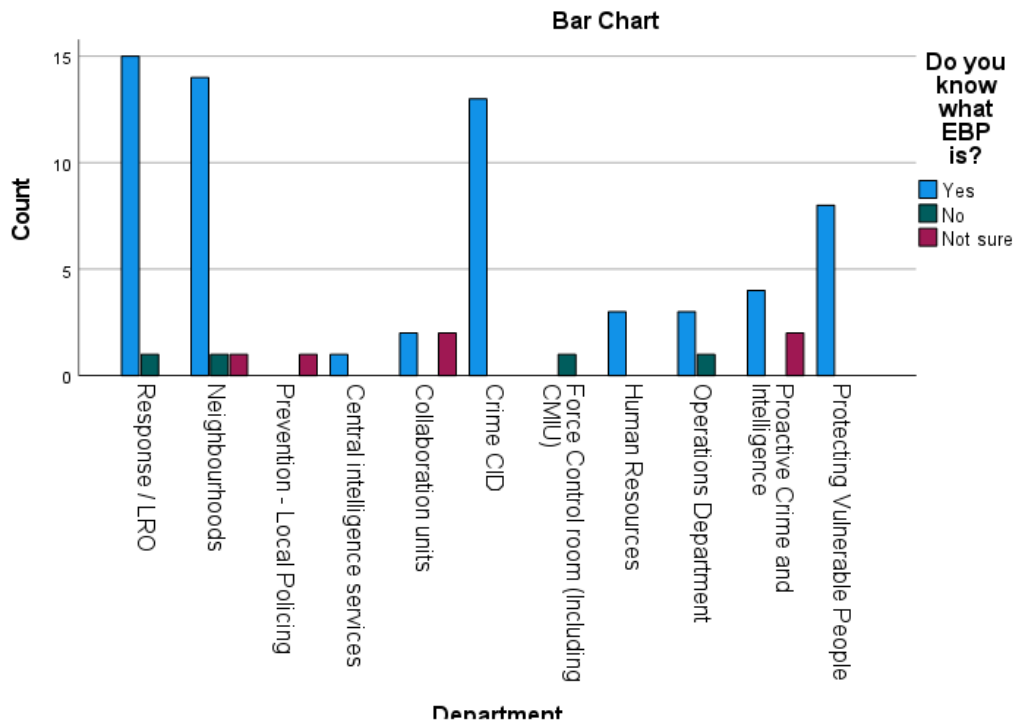


Figure 1

When comparing departments to knowledge of EBP, the data shows these departments reflect the highest knowledge of EBP.

(Data is categorical and thus non-parametric. Chi-square test utilised ($p < .001$). Data deemed significant and must refute the negative hypothesis: 'There is no lack of knowledge of EBP across departments. Therefore, accepted the alternative hypothesis: 'There is a lack of knowledge of EBP across departments.

$\chi^2(20, n = 74) 74, P = < .001$ – Reject null hypothesis

Area of analysis 'Departments compared to Confidence using EBP' represented by Table 2

Department	Confidence in using EBP														Total	
	Very confident		Confident		Somewhat confident		Neutral		Slightly not confident		Not confident		No confidence at all			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Response / LRO	0	0.0%	6	30.0%	5	33.3%	4	18.2%	0	0.0%	1	25.0%	0	0.0%	16	21.6%
Neighbourhoods	2	25.0%	4	20.0%	2	13.3%	6	27.3%	0	0.0%	0	0.0%	2	66.7%	16	21.6%
Prevention - Local Policing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	1.4%
Central intelligence services	0	0.0%	1	5.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.4%
Collaboration units	1	12.5%	1	5.0%	0	0.0%	1	4.5%	1	50.0%	0	0.0%	0	0.0%	4	5.4%
Crime CID	1	12.5%	4	20.0%	5	33.3%	2	9.1%	0	0.0%	1	25.0%	0	0.0%	13	17.6%
Force Control room (Including CHIU)	0	0.0%	0	0.0%	0	0.0%	1	4.5%	0	0.0%	0	0.0%	0	0.0%	1	1.4%
Human Resources	1	12.5%	0	0.0%	0	0.0%	2	9.1%	0	0.0%	0	0.0%	0	0.0%	3	4.1%
Operations Department	0	0.0%	0	0.0%	0	0.0%	3	13.6%	0	0.0%	1	25.0%	0	0.0%	4	5.4%
Proactive Crime and Intelligence	0	0.0%	2	10.0%	1	6.7%	1	4.5%	0	0.0%	1	25.0%	1	33.3%	6	8.1%
Protecting Vulnerable People	3	37.5%	2	10.0%	2	13.3%	1	4.5%	0	0.0%	0	0.0%	0	0.0%	8	10.8%
Prefer not to say	0	0.0%	0	0.0%	0	0.0%	1	4.5%	0	0.0%	0	0.0%	0	0.0%	1	1.4%
Total	8	100.0%	20	100.0%	15	100.0%	22	100.0%	2	100.0%	4	100.0%	3	100.0%	74	100.0%

Table 2

Confidence in using EBP, analysed against individual departments, shows the highest confidence rates in the Protecting vulnerable people and neighbourhoods departments. Neighbourhood also presents the most participants stating, 'No confidence at all', 12% of Neighbourhood participants, but Neighbourhood participants also average across the Likert scale.

(Data is deemed parametric and is normally distributed, bell-curve histogram (Figure 2))

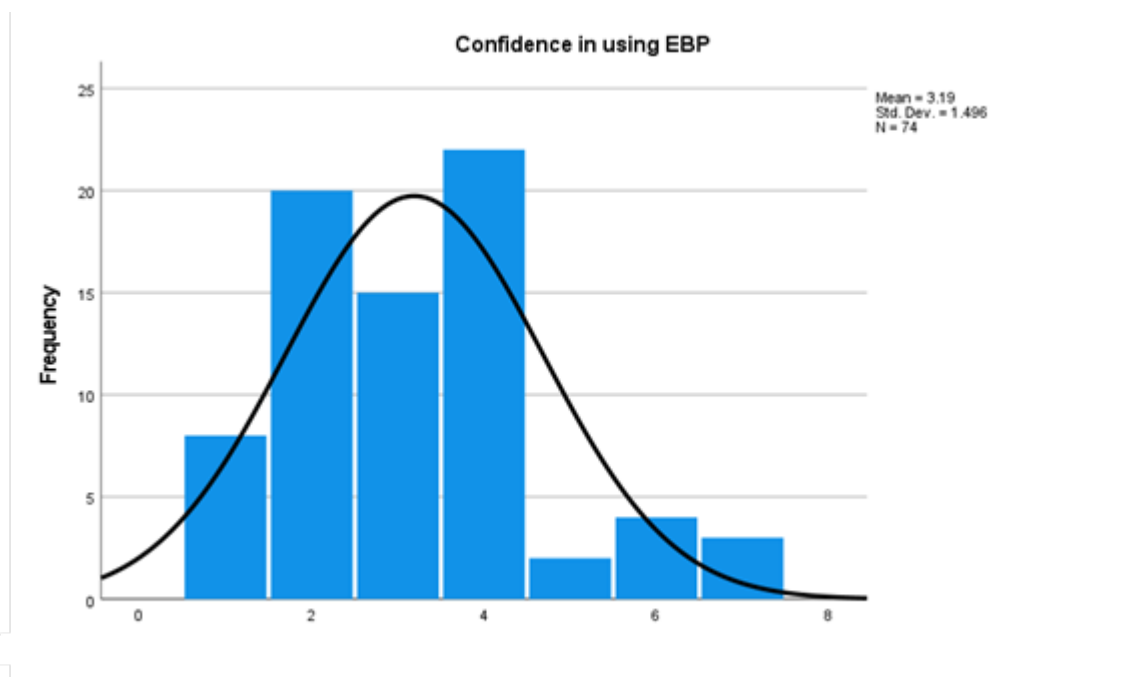


Figure 2

(Distribution is assessed as evenly distributed on QQ plot (Figure 3))

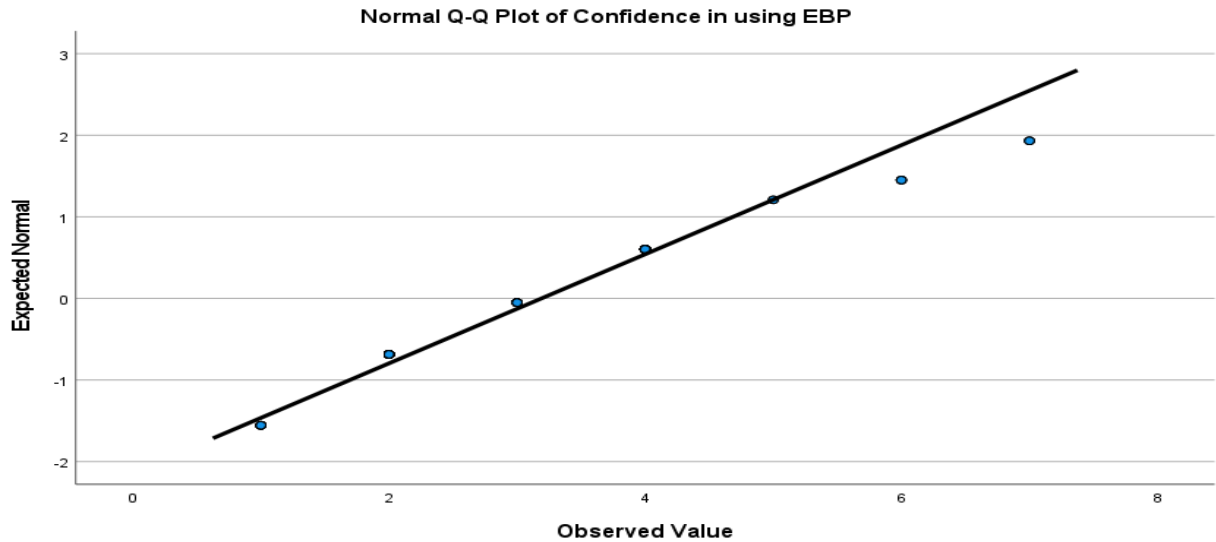


Figure 3

(Skewness = .67, acceptable range; however, kurtosis is very low at 0.25 (Figure 3)

($M = .312$, $ST = .527$) The difference between mean scores was not significant, $t(30) = -.593$, $P = .558$

Independent T-test conducted. Data deemed not significant ($P > .05$), cannot refute negative hypothesis: 'There is no significant connection between use of department and confidence with EBP usage'.

Area of analysis 'Department compared to frequency of use' represented by Table 3

Department * How often use EBP Crosstabulation

		How often use EBP															
		Never		Rarely		On a few occasions		Occasionally		Often		Very Regular use of EBP		All the time		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Department	Response / LRO	5	29.4%	4	25.0%	2	20.0%	2	18.2%	1	8.3%	1	25.0%	1	25.0%	16	21.6%
	Neighbourhoods Prevention - Local Policing	2	11.8%	2	12.5%	2	20.0%	5	45.5%	2	16.7%	1	25.0%	2	50.0%	16	21.6%
	Central intelligence services	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	1	1.4%
	Collaboration units	0	0.0%	2	12.5%	2	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	5.4%
	Crime CID	2	11.8%	5	31.3%	1	10.0%	1	9.1%	3	25.0%	1	25.0%	0	0.0%	13	17.6%
	Force Control room (Including CMIU)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	1	1.4%
	Human Resources	2	11.8%	1	6.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	4.1%
	Operations Department	2	11.8%	1	6.3%	0	0.0%	0	0.0%	1	8.3%	0	0.0%	0	0.0%	4	5.4%
	Proactive Crime and Intelligence	2	11.8%	0	0.0%	2	20.0%	1	9.1%	1	8.3%	0	0.0%	0	0.0%	6	8.1%
	Protecting Vulnerable People	1	5.9%	1	6.3%	1	10.0%	1	9.1%	2	16.7%	1	25.0%	1	25.0%	8	10.8%
Prefer not to say	0	0.0%	0	0.0%	0	0.0%	1	9.1%	0	0.0%	0	0.0%	0	0.0%	1	1.4%	
Total	17	100.0%	16	100.0%	10	100.0%	11	100.0%	12	100.0%	4	100.0%	4	100.0%	74	100.0%	

Table 3

(Data deemed not significant ($P > .05$), cannot refute negative hypothesis: 'No significant difference between departments and frequency of use of EBP'. The data for individual departments: Response, PVP, CID, Neighbourhoods, operations, and proactive crime presents as parametric. The other departments present as non-parametric (Figure 5)

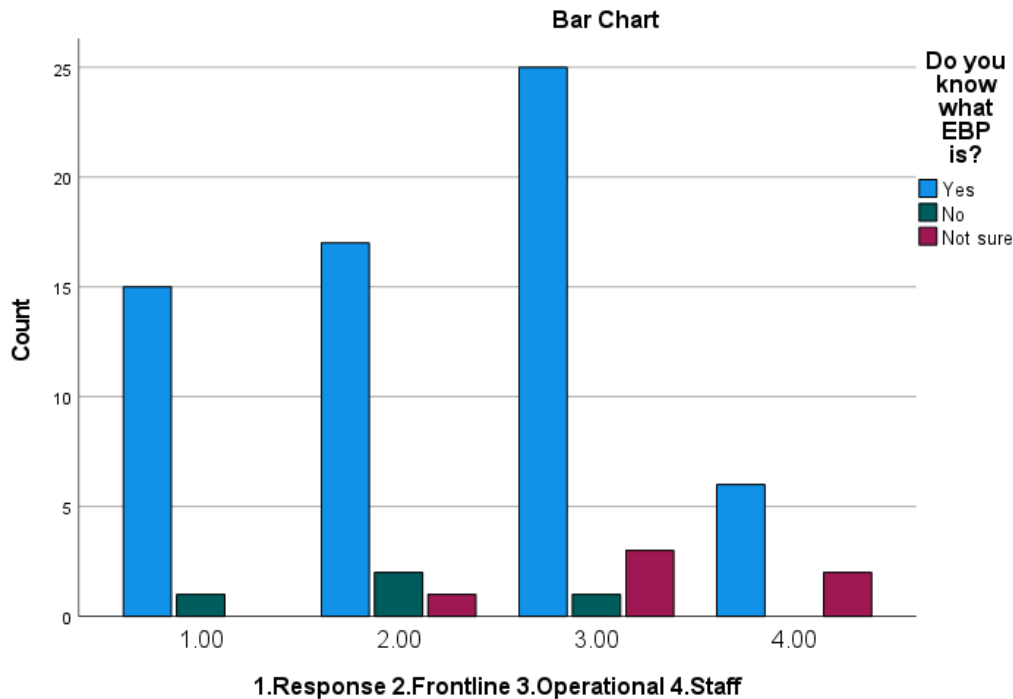


Figure 5

($M = -1.062$, $ST = .665$) Difference between mean scores was not significant, $t(30) = -1.597$, $P = .121$.)

Area of analysis 'Areas of service compared to EBP knowledge' represented in Table 4

1.Response 2.Frontline 3.Operational 4.Staff * Do you know what EBP is? Crosstabulation

		Do you know what EBP is?						Total	
		Yes		No		Not sure			
		N	%	N	%	N	%	N	%
1.Response 2.Frontline 3.Operational 4.Staff	1.00	15	23.8%	1	25.0%	0	0.0%	16	21.9%
	2.00	17	27.0%	2	50.0%	1	16.7%	20	27.4%
	3.00	25	39.7%	1	25.0%	3	50.0%	29	39.7%
	4.00	6	9.5%	0	0.0%	2	33.3%	8	11.0%
Total		63	100.0%	4	100.0%	6	100.0%	73	100.0%

Table 4

When all departments were grouped into response, frontline, operational and staff, respectively, there was no significant distinction between response and other areas of service when compared to knowledge of EBP (Figure 5). When grouped in the variable 'Areas of service) There were similar answers to that question across groups.

(Data is non-parametric (categorical). Data is deemed not significant (P > .05). Can not reject negative hypothesis: 'There is no distinction between knowledge of EBP and areas of service'.

X2(6, n = 73) 73, P = < .411 – Can not reject null hypothesis.)

For the independent sample test data, refer to Table 4a

Independent Samples Test

		Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Confidence in using EBP	Equal variances assumed	2.001	.166	-1.088	34	.142	.284	-.538	.494	-1.541	.466
	Equal variances not assumed			-1.138	32.975	.132	.263	-.538	.472	-1.499	.424

Table 4a

Area of analysis 'Areas of service compared to Confidence using EBP' represented by Table 5

*1.Response 2.Frontline 3.Operational 4.Staff * Confidence in using EBP Crosstabulation*

		Confidence in using EBP															
		Very confident		Confident		Somewhat confident		Neutral		Slightly not confident		Not confident		No confidence at all		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1.Response 2.Frontline 3.Operational 4.Staff	1.00	0	0.0%	6	30.0%	5	33.3%	4	18.2%	0	0.0%	1	25.0%	0	0.0%	16	21.6%
	2.00	2	25.0%	4	20.0%	2	13.3%	9	40.9%	0	0.0%	1	25.0%	2	66.7%	20	27.0%
	3.00	4	50.0%	8	40.0%	8	53.3%	5	22.7%	1	50.0%	2	50.0%	1	33.3%	29	39.2%
	4.00	2	25.0%	2	10.0%	0	0.0%	4	18.2%	1	50.0%	0	0.0%	0	0.0%	9	12.2%
Total		8	100.0%	20	100.0%	15	100.0%	22	100.0%	2	100.0%	4	100.0%	3	100.0%	74	100.0%

Table 5

Confidence levels are inconsistent amongst areas of service. In all areas, 'very confident' rates were low. Regarding response, the 'very confident' rate was 0. The highest response rate for participants answering in the 'very confident' and 'confident'

range belongs to the 'Operational' group, significantly higher than the other groups (Figure 7).

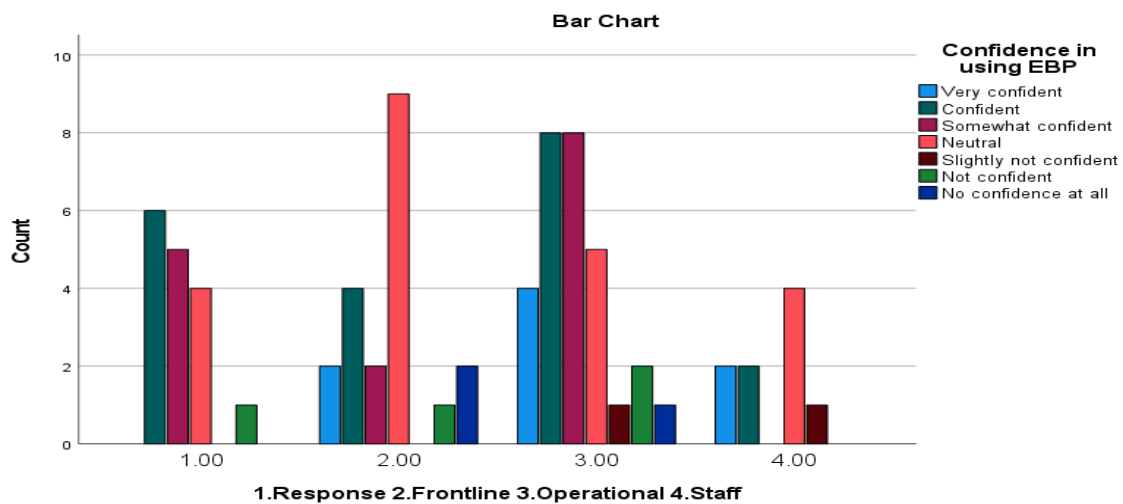


Figure 7

(Levene’s test is used to identify equality of variance between groups. Deemed not significant (sig = .116). Data deemed parametric.

(M = .312, ST = .527) Difference between means scores was not significant, $t(34) = -1.088$, $P = .284$

Independent T-test conducted. Data deemed not significant ($P > .05$), cannot reject negative hypothesis: ‘There is no significant connection between area of service and confidence with EBP usage’)

For independent T-test data, refer to Table 5a

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
How often use EBP	Equal variances assumed	.026	.873	-1.145	34	.130	.260	-.737	.644	-2.047	.572
	Equal variances not assumed			-1.147	32.482	.130	.260	-.737	.643	-2.047	.572

Table 5a

Area of analysis ‘Area of service compared to frequency of EBP use’ represented by Table 6

Frequency of EBP usage by area of service

		How often use EBP														Total	
		Never		Rarely		On a few occasions		Occasionally		Often		Very Regular use of EBP		All the time		N	%
		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1.Response 2.Frontline 3. Operational 4.Staff	1.00	5	29.4%	4	25.0%	2	20.0%	2	18.2%	1	8.3%	1	25.0%	1	25.0%	16	21.6%
	2.00	4	23.5%	3	18.8%	2	20.0%	5	45.5%	3	25.0%	1	25.0%	2	50.0%	20	27.0%
	3.00	6	35.3%	6	37.5%	4	40.0%	3	27.3%	7	58.3%	2	50.0%	1	25.0%	29	39.2%
	4.00	2	11.8%	3	18.8%	2	20.0%	1	9.1%	1	8.3%	0	0.0%	0	0.0%	9	12.2%
Total		17	100.0%	16	100.0%	10	100.0%	11	100.0%	12	100.0%	4	100.0%	4	100.0%	74	100.0%

Table 6

(Data deemed not significant ($P > .05$), cannot reject negative hypothesis: 'No significant difference between areas of service and frequency of use of EBP'. The data is deemed parametric using Levene's test for equality (sig = .873).

($M = -.737$, $ST = .644$) Difference between mean scores was not significant, $t(34) = -1.145$, $P = .260$.)

For independent T-test data, refer to Table 6a.

Independent Samples Test

	Levene's Test for Equality of Variances				t-test for Equality of Means						
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Is there value in EBP in your role?	Equal variances assumed	.072	.790	1.953	32	.030	.060	.926	.474	-.040	1.892
	Equal variances not assumed			1.976	31.307	.029	.057	.926	.469	-.029	1.882

Table 6a

Area of analysis 'Areas of service compared to perceived value of EBP' represented by Table 7.

Perceived value of EBP in participants respective area of service

		Is there value in EBP in your role?												Total			
		7 - Significant value		6 - High value		5 - Moderate value		4 - Some value		3 - Little value		2 - Very little value		1 - No value to me		N	%
		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
1.Response 2.Frontline 3. Operational 4.Staff	1.00	0	0.0%	3	15.0%	7	43.8%	3	15.8%	1	33.3%	0	0.0%	1	50.0%	15	20.8%
	2.00	4	36.4%	8	40.0%	4	25.0%	2	10.5%	0	0.0%	0	0.0%	1	50.0%	19	26.4%
	3.00	5	45.5%	7	35.0%	5	31.3%	10	52.6%	2	66.7%	0	0.0%	0	0.0%	29	40.3%
	4.00	2	18.2%	2	10.0%	0	0.0%	4	21.1%	0	0.0%	1	100.0%	0	0.0%	9	12.5%
Total		11	100.0%	20	100.0%	16	100.0%	19	100.0%	3	100.0%	1	100.0%	2	100.0%	72	100.0%

Table 7

There is a significant difference in results across areas of service. Participants, when grouped into areas of service, reflect across the Likert scale with no significant focus on any one value (Figure 14).

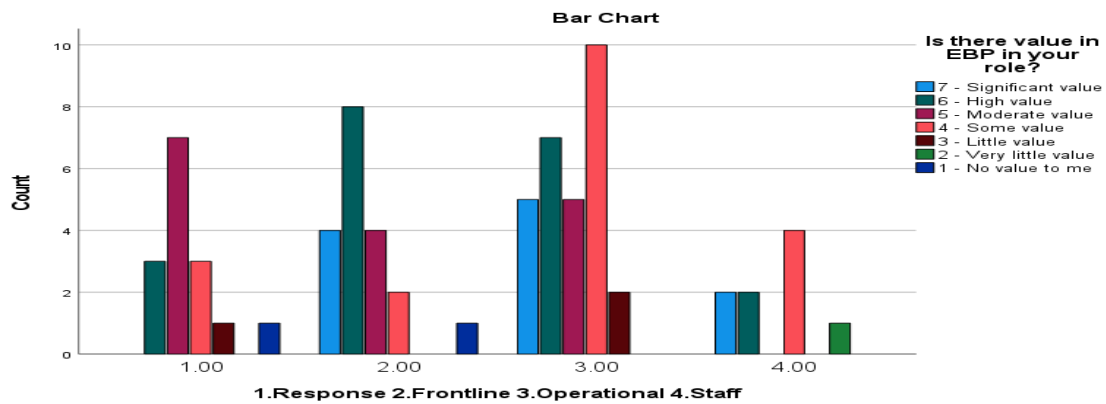


Figure 14

(Data deemed not significant ($P > .05$), cannot reject negative hypothesis: 'There is no significant area of service with lack of perceived value in EBP'. The data is deemed parametric using Levene's test for equality ($sig = .790$).

($M = -.926$, $ST = .474$) Difference between mean scores was not significant, $t(32) = -1.953$, $P = .060$.)

Area of analysis 'Entry route compared to knowledge of EBP' represented by Table 8.

Entry route compared to knowledge of EBP

Entry Route		Do you know what EBP is?						Total	
		Yes		No		Not sure			
		N	%	N	%	N	%	N	%
Police Constable Degree Apprenticeship PCDA	12	19.0%	0	0.0%	0	0.0%	12	16.4%	
Degree Holder Entry Route DHEP	10	15.9%	0	0.0%	0	0.0%	10	13.7%	
Police Constable Entry Program (Non-degree entry)	8	12.7%	1	25.0%	2	33.3%	11	15.1%	
Professional Policing Degree Holder Entry Route	4	6.3%	0	0.0%	1	16.7%	5	6.8%	
Detective Entry Route	4	6.3%	0	0.0%	0	0.0%	4	5.5%	
Specials officer	1	1.6%	0	0.0%	0	0.0%	1	1.4%	
Previous standard entry (Entry routes no longer available)	21	33.3%	3	75.0%	3	50.0%	27	37.0%	
Police Staff Role	3	4.8%	0	0.0%	0	0.0%	3	4.1%	
Total	63	100.0%	4	100.0%	6	100.0%	73	100.0%	

Table 8

All participants who were PCDA or DHEP entry routes answered ‘yes’ to knowledge of EBP. The acknowledgement of participant knowledge of EBP is significantly high across all entry routes, but there are still some participants who answered ‘no’ or ‘not sure’ (Figure 8).

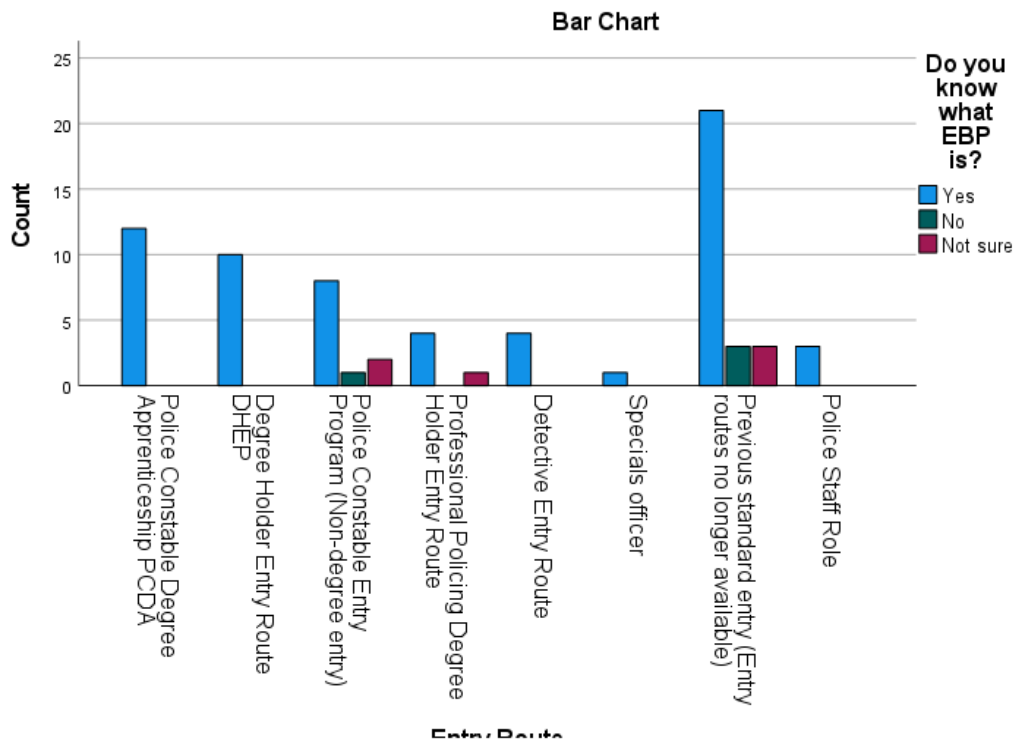


Figure 8

(Data is non-parametric (categorical). Data is deemed not significant ($P > .05$). Can not reject negative hypothesis: ‘There is no significant distinction between knowledge of EBP and entry route’.

$X^2(14, n = 73) 73, P = < .777$ – Can not reject null hypothesis)

For Chi-square test data, refer to Table 8a.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.464	18	.763
Likelihood Ratio	16.081	18	.587
Linear-by-Linear Association	.353	1	.552
N of Valid Cases	72		

Table 8a

Area of analysis 'Areas of service against barriers to EBP' represented by Table 9.

1.Response 2.Frontline 3.Operational 4.Staff * Barriers using EBP Crosstabulation

		Barriers using EBP															
		Yes - Computers - Access to databases restricted by IT/ systems		Yes - Computers - No software/ information readily available		Yes - Resources - No readily available resources on EBP		Yes - Resources - No point of reference/ staff to assist with EBP		Yes - Support - Lack support/ guidance from team or supervisors		Yes - Other		No - I have not had issues with using EBP		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1.Response 2.Frontline 3.Operational 4.Staff	1.00	0	0.0%	0	0.0%	1	50.0%	1	100.0%	3	23.1%	1	16.7%	10	23.3%	16	22.2%
	2.00	0	0.0%	1	25.0%	1	50.0%	0	0.0%	4	30.8%	2	33.3%	11	25.6%	19	26.4%
	3.00	3	100.0%	2	50.0%	0	0.0%	0	0.0%	5	38.5%	3	50.0%	16	37.2%	29	40.3%
	4.00	0	0.0%	1	25.0%	0	0.0%	0	0.0%	1	7.7%	0	0.0%	6	14.0%	8	11.1%
Total		3	100.0%	4	100.0%	2	100.0%	1	100.0%	13	100.0%	6	100.0%	43	100.0%	72	100.0%

Table 9

Each area of service shows different rates to varying barriers of EBP use (Figure 9).

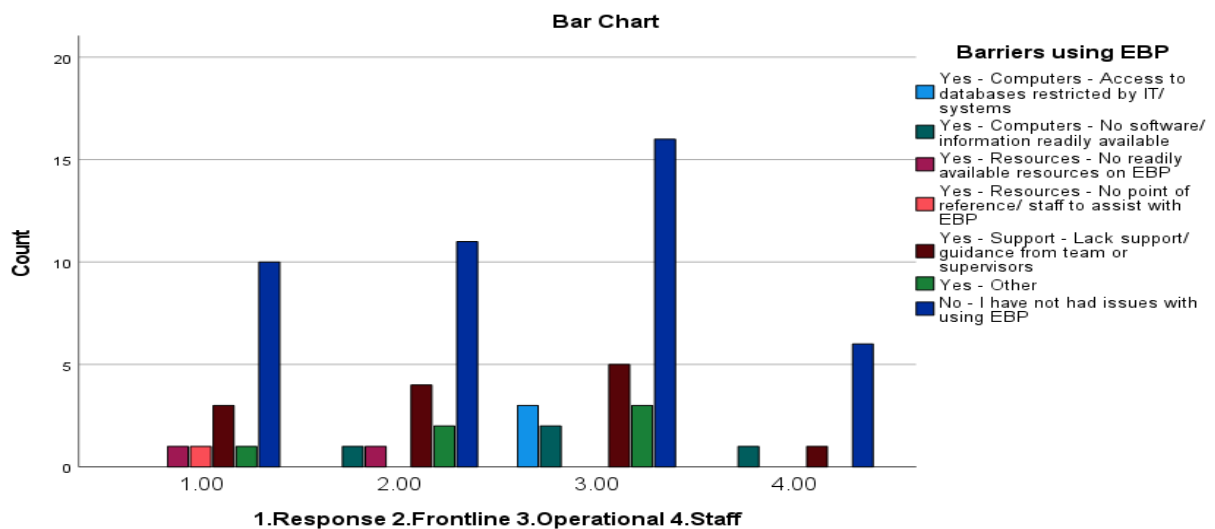


Figure 9

All areas of service show between 14% and 38% of participants without experiencing any barriers to EBP. No area of service has less than 14% of participants not experiencing barriers to EBP.

A particular response, 'Yes – Computers...' is represented highly across all groups.

(Data is non-parametric (categorical). Data is deemed not significant (P > .05). Can not reject the negative hypothesis: 'There is no significant distinction between areas of service and experiencing barriers to EBP'.

X²(18, n = 72) 72, P = < .763 – Can not reject null hypothesis)

For Chi-square test data, refer to Table 9a

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.191	14	.671
Likelihood Ratio	8.630	14	.854
Linear-by-Linear Association	1.656	1	.198
N of Valid Cases	73		

Table 9a

Area of analysis 'Rank of participants against EBP knowledge' represented by Table 10.

Knowledge of EBP by rank or staff

Rank or staff	Do you know what EBP is?						Total	
	Yes		No		Not sure		N	%
	N	%	N	%	N	%		
Police Staff	3	4.8%	0	0.0%	0	0.0%	3	4.1%
Police Constable	43	68.3%	3	75.0%	4	66.7%	50	68.5%
Police Sergeant	9	14.3%	0	0.0%	1	16.7%	10	13.7%
Inspector	2	3.2%	0	0.0%	0	0.0%	2	2.7%
Detective Inspector	2	3.2%	1	25.0%	0	0.0%	3	4.1%
Chief inspector	1	1.6%	0	0.0%	0	0.0%	1	1.4%
Detective Chief Inspector	2	3.2%	0	0.0%	0	0.0%	2	2.7%
Prefer not to say	1	1.6%	0	0.0%	1	16.7%	2	2.7%
Total	63	100.0%	4	100.0%	6	100.0%	73	100.0%

Table 10

Different ranks show different results for knowledge of EBP. Most participants are constables or sergeants (Figure 10)

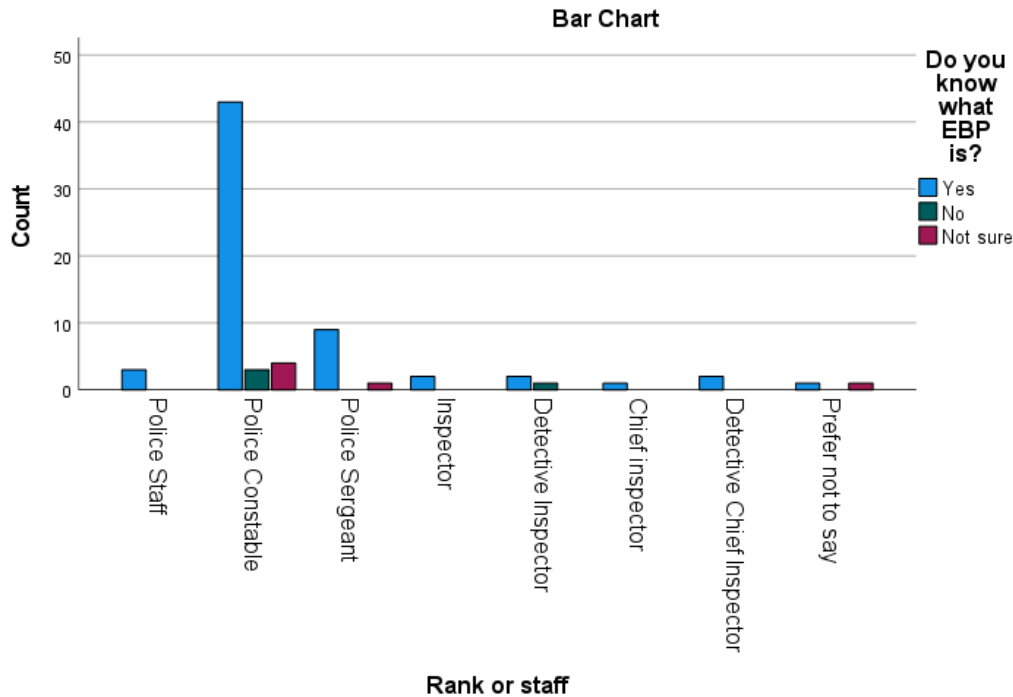


Figure 10

Most participants, when grouped into these variables, are dominantly of 'Police Constable' rank, with the second highest being 'Police Sergeant' rank (Figure 10)

(Data is non-parametric (categorical). Data is deemed not significant (P > .05). Can not reject negative hypothesis: 'There is no significant distinction between ranks and knowledge of EBP')

X²(14, n = 73) 73, P = < .671 – Can not reject null hypothesis)

For Chi-square test data, refer to Table 10a.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
How often use EBP	Equal variances assumed	.820	.369	1.034	51	.153	.306	1.120	1.083	-1.054	3.294
	Equal variances not assumed			.723	2.110	.271	.541	1.120	1.548	-5.219	7.459

Table 10a

Area of analysis ‘Rank of participants against frequency of EBP usage’ represented by Table 11.

Frequency of EBP usage by rank

Rank or staff	How often use EBP														Total	
	Never		Rarely		On a few occasions		Occasionally		Often		Very Regular use of EBP		All the time		N	%
	N	%	N	%	N	%	N	%	N	%	N	%				
Police Staff	0	0.0%	1	6.3%	1	10.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	3	4.1%
Police Constable	14	82.4%	12	75.0%	7	70.0%	7	63.6%	6	50.0%	1	25.0%	3	75.0%	50	67.6%
Police Sergeant	1	5.9%	1	6.3%	2	20.0%	2	18.2%	3	25.0%	1	25.0%	0	0.0%	10	13.5%
Inspector	0	0.0%	2	12.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.7%
Detective Inspector	1	5.9%	0	0.0%	0	0.0%	1	9.1%	0	0.0%	1	25.0%	0	0.0%	3	4.1%
Chief inspector	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	1	1.4%
Detective Chief Inspector	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	16.7%	0	0.0%	0	0.0%	2	2.7%
Prefer not to say	1	5.9%	0	0.0%	0	0.0%	1	9.1%	1	8.3%	0	0.0%	0	0.0%	3	4.1%
Total	17	100.0%	16	100.0%	10	100.0%	11	100.0%	12	100.0%	4	100.0%	4	100.0%	74	100.0%

Table 11

Police constables present the highest rates of never using EBP. The data set shows that most Police constable respondents answered in the negative on the Likert scale, compared to other respondents who are more evenly distributed across the scale (Figure 11).

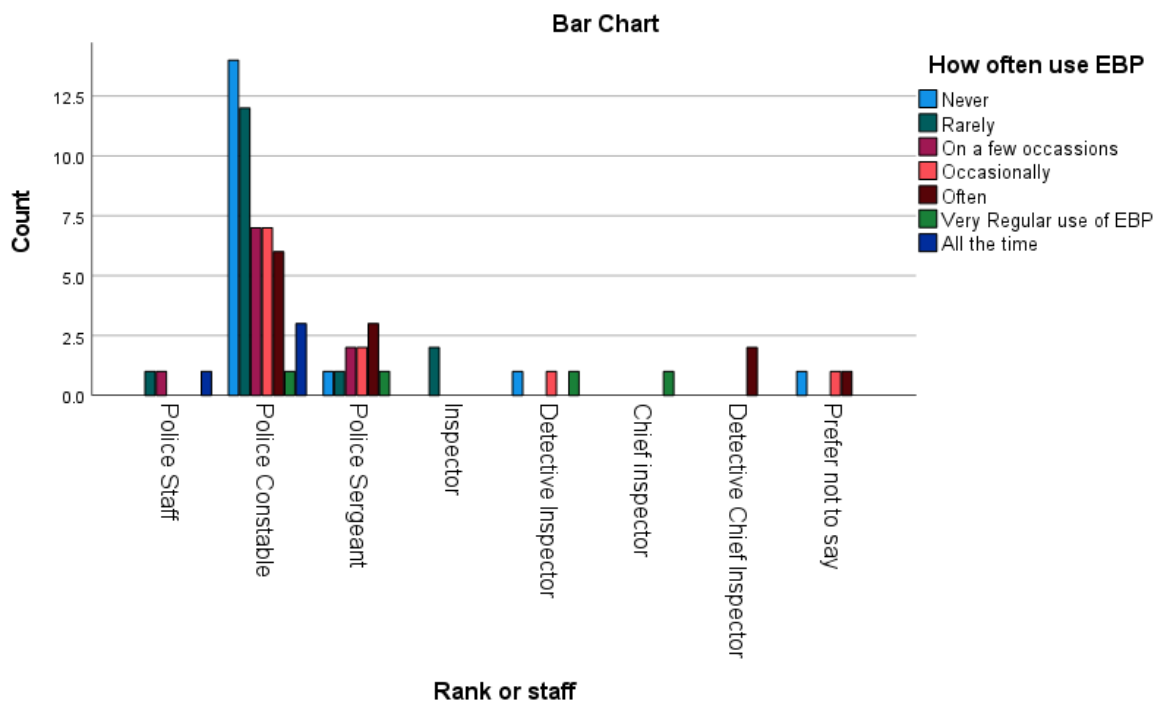


Figure 11

(Data deemed not significant ($P > .05$), cannot reject negative hypothesis: 'No significant difference between police ranks or staff and frequency of use of EBP'. The data is deemed parametric using Levene's test for equality ($sig = .369$).

($M = 1.120$, $ST = 1.083$) Difference between mean scores was not significant, $t(51) = -1.034$, $P = .306$)

For independent T-test data, refer to Table 11a.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.082	6	.313
Likelihood Ratio	6.999	6	.321
Linear-by-Linear Association	.832	1	.362
N of Valid Cases	74		

Table 11a

For the Independent T-test effect size, refer to Table 11b

Independent Samples Effect Sizes

		Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
How often use EBP	Cohen's d	1.822	.615	-.559	1.783
	Hedges' correction	1.849	.606	-.551	1.757
	Glass's delta	1.780	.629	-.546	1.798

^a. The denominator used in estimating the effect sizes.

Cohen's d uses the pooled standard deviation.

Hedges' correction uses the pooled standard deviation, plus a correction factor.

Glass's delta uses the sample standard deviation of the control group.

Table 11b

Area of analysis 'Areas of service compared to further EBP training' represented by Table 12.

Area of service compared to opinion on further training

			Further training in EBP be beneficial						Total		
			Yes		No		Not sure				
			N	%	N	%	N	%	N	%	
1.Response	2.Frontline	3.	1.00	5	12.2%	5	41.7%	6	28.6%	16	21.6%
Operational	4.Staff		2.00	13	31.7%	2	16.7%	5	23.8%	20	27.0%
			3.00	19	46.3%	3	25.0%	7	33.3%	29	39.2%
			4.00	4	9.8%	2	16.7%	3	14.3%	9	12.2%
Total				41	100.0%	12	100.0%	21	100.0%	74	100.0%

Table 12

Variance in opinions on value in further EBP training. Response participants show as the most divided between ‘yes’, ‘no’, and ‘unsure’ (Figure 12).

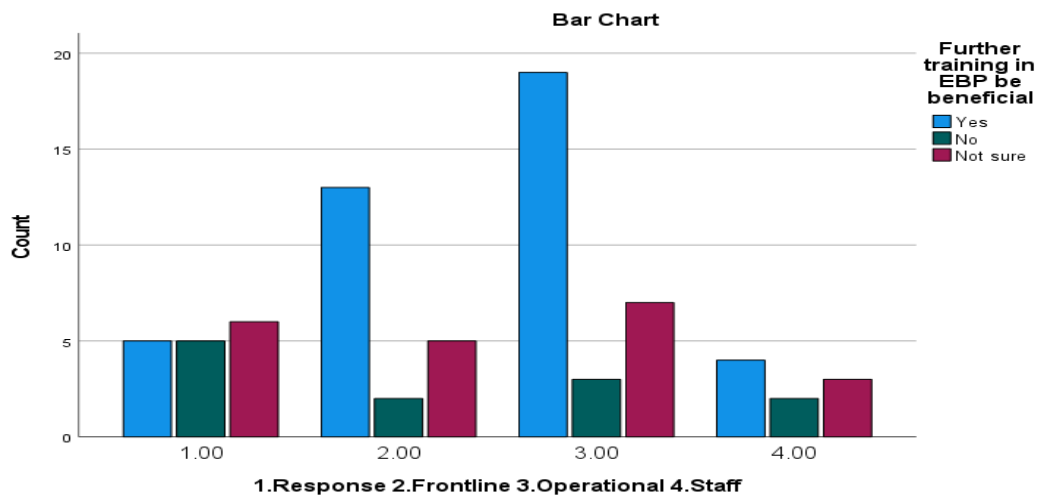


Figure 12

(Data is non-parametric (categorical). Data is deemed not significant ($P > .05$). Can not reject negative hypothesis: ‘There is no difference between opinions on training across different areas of service’.

$X^2(6, n = 74) 74, P = < .313$ – Can not reject null hypothesis)

For Chi-square test data, refer to Table 12a

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.208	12	.598
Likelihood Ratio	11.323	12	.502
Linear-by-Linear Association	1.959	1	.162
<hr/>			
N of Valid Cases	73		

Table 12a

Area of analysis 'Areas of service compared to What would increase confidence using EBP' represented by Table 13.

Areas of service compared to what would increase confidence using EBP

		What would improve confidence using EBP?											
		College of Policing training package		In person/ on duty training		E-learning		Documentation/ reference points on force systems		Not required		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
1.Response 2.Frontline 3. Operational 4.Staff	1.00	0	0.0%	7	20.0%	1	12.5%	3	25.0%	4	36.4%	15	20.5%
	2.00	3	42.9%	8	22.9%	2	25.0%	5	41.7%	2	18.2%	20	27.4%
	3.00	2	28.6%	17	48.6%	4	50.0%	2	16.7%	4	36.4%	29	39.7%
	4.00	2	28.6%	3	8.6%	1	12.5%	2	16.7%	1	9.1%	9	12.3%
Total		7	100.0%	35	100.0%	8	100.0%	12	100.0%	11	100.0%	73	100.0%

Table 13

Most participants have selected the 'in person' training option than any other option for what would improve their confidence using EBP.

Visibly, the most responses across all groups is 'in person/ on duty training' (Figure 13)

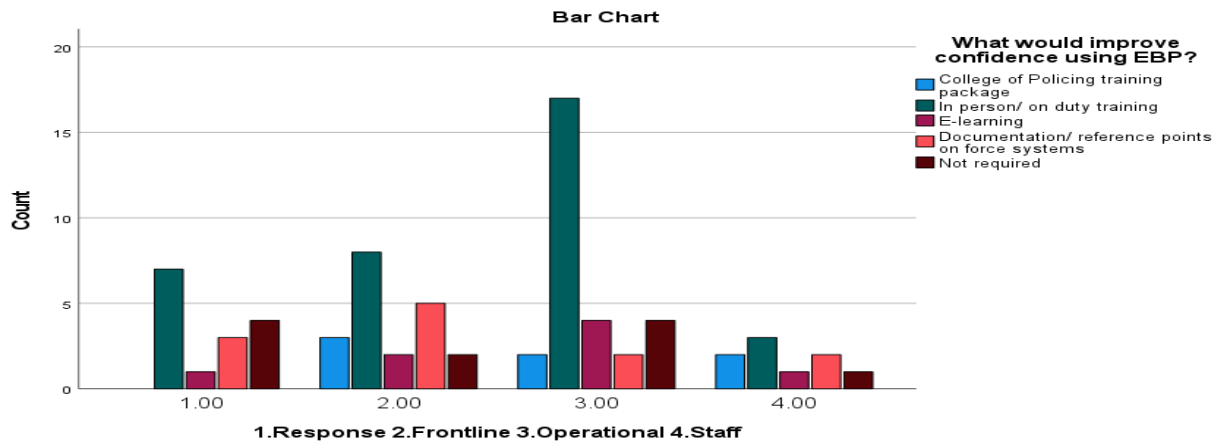


Figure 13

(Data is non-parametric (categorical). Data is deemed not significant ($P > .05$). Can not reject negative hypothesis: 'There is no difference in opinion on what training method would improve confidence with EBP, across different areas of service'.

$\chi^2(12, n = 73) 73, P = < .598$ – Can not reject null hypothesis)

Discussion

The participants' knowledge and extent of knowledge of EBP are fundamental to this project. 73 participants ($n=74$) answered the question "Do you know what Evidence-Based Policing is?" (Figure 1). Of these, 63 participants answered yes, over 86% of the valid sample (Table 1). When including the 6 participants who incorrectly defined EBP, that is 63 participants of 81 with 'correct' definitions of EBP. Approximately 78% of participants overall provided a valid definition of EBP. This is a significant percentage, but it does indicate that 1 in 5 participants do not know or cannot define what EBP is. Of all the departments that participants selected, only the 'Human Resources' department had a 100% correct knowledge base of EBP (Table 1/ Figure 1). However, the sample size for 'Human Resources' participants is too small to draw analysis from, with only 3 participants selecting 'Human Resources' as their department (Table 1). Except for 'Human Resources', the department with the highest valid knowledge base was 'Crime/ CID' (Table 1/ Figure1). 13 of the 14 participants correctly defined EBP (Table1/ Figure1). Only one participant of this department (Participant 24) incorrectly defined EBP (Table 14/ Table 16).

Definitions of EBP given by 'Crime/CID' participants are detailed; participants shared themes of "academic methodology", "Theories", and "Hypothesis testing" more frequently than other departments. Some Response participants also showed similar themes in the definition "Using theory to develop better ways to police certain issues and communities, such as hotspot policing." (Participant 5). This participant identifies key areas of developing academic theory and community focus, which is reflective of Klose's (2024) definition of evidence-based practice. Definitions from Response participants, however, varied in the level of detail and were less consistent. To gain a focused comparison to response, departments were grouped into Response, Frontline, Operational and Staff (Table 4). These variables were grouped into respective areas of service through statistical analysis software to provide a more inferential analysis. When comparing Response to the other 'areas of service', there is a distinctively similar pattern across all areas of service (Figure 5). A significant majority of participants displayed a valid knowledge of EBP, with a statistically low number of participants selecting 'No' or 'Not sure', reflected across areas of service. Response ranked as the third-highest department regarding participant knowledge, when the two participants with incorrect answers were included. This results in an 83% knowledge rate of EBP within the response department, compared to the average knowledge across departments of 78% (Table1/ Table4). This suggests that respondents have a reasonably high understanding of EBP as a concept.

Participants in general have a reasonable knowledge of EBP as a concept, 80% averaged across the sample, but also echoed a series of themes throughout their qualitative responses. In the data set, EBP is described with key terms. These were the practice of using "Best available evidence", deriving from "research", "Data", "Statistics", "Academics", or "What works", to effect "Policies", "Practices" and "Decisions" regarding "Policing" or "Local issues". Further, participants stated this would allow for "Strategic policing", "Tactical Policing", "Better Policing", "develop Evidence Base". Participants acknowledged the continuation of this policing model through "Scientific methods", "Test", and "Analysis". Collectively providing a robust definition. Not all participants could provide an effective definition and stated they could not do so (Participants 11, 18, 49, 59, 63, 75, 81). Of those participants who had incorrect definitions of EBP, all participants shared themes in their incorrect definitions. These were the use of "Evidence" or "Best evidence" but to further a "Criminal case",

“Evidence leads prosecution”, or “Investigation”. Further, they iterate the theme of “Unsupportive victims” and “Investigations based on evidence”. Through the context of the responses. Most incorrect answers came from participants of ‘Response’ and ‘Protecting vulnerable people’ departments (Table 15/ Table 16).

These results are reflective of Palmer, Kirby, and Coleman (2019), who identified themes of ‘What-works’ used by participants. 1 in 5 participants with a lack of knowledge of EBP is significant, but there are no relevant academic publications providing grounds for comparison, a notable research gap.

Participant confidence in using EBP was one area the research focused on. “Do you feel confident using Evidence-Based Policing in your role?” (Table 2/ Figure 2). In order of participant responses (seven-point Likert scale), 30% answered ‘neutral’, at the centre of the scale. 27% answered ‘Confident’ to this question. 20% ‘Somewhat confident’. These were the top three answers on the Likert scale. Followed by only 11% answering ‘Very confident’, the top confidence level, 5% ‘Not confident’, 4% ‘Not confident at all’, and lastly 3% answered ‘Somewhat not confident’. (Table 2/ Figure 2) ‘Very confident’ ranked low, at 4th highest result. As the highest mark on the Likert scale is ‘Neutral’ it can be ascertained that a significant number of participants do not have a strong sense of confidence in using EBP within their role. However, ‘Confident’ answers did score at the second highest, showing there is still a reasonable level of confidence within EBP usage across this selected force. Of all departments, the participants closest to the upper end of the Likert scale belonged to the ‘Protecting vulnerable people’ department (Table 2/ Figure 2). All participants of this department scored in the former half of the scale, with no participants answering below ‘neutral’ (1) and with most participants answering, ‘Very confident’ (3). It is of note that participants from protecting vulnerable people also showed the most extensive use of EBP when asked to provide examples of how they use EBP. “Counselling for PVP staff, Restructure of staffing in MASH and OCAIU PEEL recommendations CE Hub Business Case” (Participant 14). There is an identified relationship here between this department’s confidence and pragmatic application of EBP.

Grouping into areas of service (Table 5) Response can be compared to the other areas more effectively. ‘Response’ is the only Area of service to have no participants state ‘very confident’ (Figure 7). Also ranking second highest for ‘No confidence’. This

reflects that Response officers may have a lack of confidence using EBP. That being stated, most response participants averaged closely across 'Confident', 'Somewhat confident', and 'Neutral', with 'Confident' as the highest (Table 5/ Figure 7). This does show consistency in this area of service as well as a reasonable response with 'Confidence' overall. The confidence level of response pales in comparison to other areas of service but is not significantly low.

Rogers, Pepper, and Skilling (2022) state use of EBP is often restricted by a lack of support from ranking officers. Few frontline officers share a deep perception of confidence or understanding of EBP. Their study is reflected in this research project and could be a key aspect as to why confidence levels are among the lowest within the response department. This research identifies a similar triangulation between response, confidence levels and other departments, lending support to the findings by Rogers, Pepper, and Skilling (2022). Generally, confidence with EBP is more likely to be between a neutral and slight positive standing amongst officers and staff, but more likely to be lower within response.

Core to this project is understanding participants' actual usage of EBP. Analysing the mean and averaged responses to the question "How often do you use Evidence Based Policing in your role?", a trend in the dataset can be observed (Table 3/ Figure 4). The highest responses on the Likert scale fall in the first category and become fewer as the scale reaches its seventh point. This shows that, on average, participants were significantly more likely to say they do not use EBP within their role. 45% of all participants answered that they either 'Never' or 'Rarely' use EBP, with 'Never' being 23% of all participants (n=74). This pattern was most apparent with 'Response' participants (Figure 4), and is reflected similarly across all departments, except for 'Neighbourhood', who average in the centre of the Likert scale, and 'Protecting vulnerable policing', which shows an average across the seven-point scale, apart from the option of 'Often'. The 'Protecting vulnerable people' department had participants twice as likely to select this option as any other (Figure 4). Identifying that it is more likely for participants of this department to use EBP often in practice. Comparing areas of service, Respondents were significantly more likely to answer with either 'Never' or 'Rarely' compared to the other areas of service (Figure 6). Figure 6 demonstrates that Response is the only area of service where both 'Never' and 'Rarely' using EBP is over twice as frequent in participant responses, showing officers' perception of EBP

usage being significantly low. The other areas of service also reflect a noticeably high response to 'Never' or 'Rarely' using EBP, but responses are more evenly distributed compared to the response (Table 6/ Figure 6). 'Staff' roles present as having the closest to response in reflection of answers to this question (Table 6/ Figure 6). From this dataset, it can be reasonably stated that Response officers have the lowest perceived usage of EBP within their role, compared to other areas of service. Over 56% of response participants stated 'Never' and 'Rarely'. This may present a lack of use or a lack of awareness of the use of EBP.

A relationship was identified between Response's frequency of use and confidence in EBP. Heaton and Tong (2016) express the need for willingness for a department to adopt EBP principles. A lack of departmental willingness to incorporate EBP may be one potential reason for these findings. Also, a lack of willingness and push against police culture is a persistent theme within the literature discussed. The data presents relationships between departments, frequency of use and confidence with EBP.

Comparing the data to the perceived value that EBP has within each participant's area of service, Table 7 presents the participants' answers on a Likert scale to the question "Do you think there is value with Evidence Based Policing, to you, in your role?" Similar results to this question across all areas of service, except for Response. Looking at the top two answers on the Likert scale, 'Significant value' and 'High value', most participants fell into either of these categories. 63% of Frontline participants answered in 'Significant value' or 'High value', with 23% of participants answering 'Significant'. The majority have high perceptions of value across frontline roles.

Slightly lower, 41% of Operations participants answered in these two options, with 17% answering 'Significant value', a similar score to Frontline. Staff roles scored the top two options as 44%, with 22% answering 'Significantly high', very similar results to Operations roles. Response, however, presents contrasting views, with only 20% of participants selecting the two highest options on the Likert scale. 0% of all Response participants selected 'Significant value'. This drastically contrasts with the other areas of service, showing a lower perception of the value of EBP within the Response role. In all other areas, 87 – 95% of participants have selected answers in the positive range. This presents a distinction between Response and the other areas

of service. Response officers were therefore more likely to perceive the value of EBP as lower than in other areas of service.

When analysing these results against the participants' use of EBP, a distinct pattern emerges (Table 6/ Table 7). The two Likert scales do not overlap but present as an antithetical scale (Figure 6/ Figure 14). A clear observation can be made between these two variables. Participants trended towards the top two negative scale points, with the fewest scores in the top positive scale points, in the frequency of usage data. The opposite can be observed in perceptions of value, where the trend is in the top two positive scale points, and the fewest in the negative (Figure 6/ Figure 14). This pattern shows that although use of EBP is notably low, the perceptions of its value do not correlate to the actual usage of EBP, but rather, may suggest participants hold value in it, but are still not effectively using EBP within their respective roles. This is less reflective by Response participants, who present as the lowest in scoring in both the value and usage of EBP.

This research presents the potential multiple correlation coefficient in the data between frequency of use, participant perceived value in EBP, and participant areas of service. This correlation is, however, an unexplored area in academia, with a significant lack of research in this area.

In general, the lack of perceived value is frequently due to a stagnant police culture and lack of professionalisation (Palmer, Kirby, and Coleman, 2019). This lack of professionalisation may indicate why officers from certain departments face a lower perceived value in EBP. This may also show why the results demonstrate that officers from a more recent, 'professionalised' entry route have higher value in EBP and a more precise definition of it.

This research analyses what barriers officers and staff are facing when using EBP (Table 9/ Figure 9). 60% of participants (n=74) stated they did not meet barriers when using EBP. Of those who have the most prominent barrier was clearly presented as a lack of support from the team and their supervisors. 18% of all participants stated that supervisors and team support were the main barriers they faced when approaching EBP (Table 9/ Figure 9). Close to half of all barriers faced are supervisory or team support. The only role to not rank this as the highest barrier was staff role participants, who ranked a lack of software and inaccessibility to information, joint with

supervisor and team support. It is presented in the data that lack of support is the key barrier across most areas of service, preventing the use of EBP. In the qualitative data, a theme emerged as a barrier to EBP. This was the lack of time to use EBP, which is effectively articulated by Participant 69: “Evidence-based policing strategies require sufficient time to be allocated to effectively solve problems. This time would rarely be afforded to me in a suitable working environment.”

Heyer (2022), as discussed previously, acknowledges a lack of structured support within policing to enable evidence-based practices. Heyer (2022) states that state officers are not amenable to the adoption of EBP, which also extends to officers supporting other officers approaching it. Further, the available literature suggests that response and frontline officers receive the least support with evidence-based policing (Selby-Fell and Newton, 2022). Based on the data analysis, this research concurs with the opinions of these studies. The prominent barrier presents as a lack of supervisory and team support. Further, EBP is something which requires time to implement.

Not all participants perceived value in EBP: “EBP is not something that practitioners deal with. It is cascaded through the organisation through research conducted by or on behalf of the force/CoP as part of training.” (Participant 64). This is one example of a theme between participants who have scored EBP on the negative side of the Likert scale. This is the theme of EBP not having a place in response or frontline level, but suitable and known to those within higher ranks. Further, participants also express a theme of entry route affecting knowledge of EBP: “No one except PCDA students seems to know what EBP is.” (Participant 15). As such, there is academic value in analysing an EBP knowledge base against different ranks and entry routes.

83% of PC participants stated they knew what EBP was and provided accurate definitions (Table 10/ Figure 10). PS participants correctly defined and stated knowledge of EBP at 90%. PS participants had a 7% higher knowledge rate of EBP, with the most common answer referring to “Best available evidence” and affecting “Policies, practices and decisions” (Participant 42). Definition and knowledge are similar across both ranks. The only notable difference in definition is the tendency for Response participants to provide further detail in the definition, “evidence-based policing is a policing method originated by Prof Lawrence Sherman. It combines

evidence collating from 'pracademics' and using the evidence to find better solutions to policing." (Participant 15). Palmer, Kirby, and Coleman (2019) state that supervisors of rank above PC are more inclined to use, understand and hold value in EBP. The research does show a slight increase in EBP knowledge, but data across ranks is insignificant. Comparing all the entry routes to knowledge of EBP, several areas show a 100% knowledge rate of EBP (Table 8/ Figure 8). These are participants from entry routes "Police constable degree apprenticeships PCDA" and "Degree holder entry route DHEP".

Participants of the former standard entry route showed 78% accurate knowledge of EBP. This shows that officers belonging to the degree-based entry programs had a significantly higher perceived rate of EBP knowledge. Qualitative data shows one theme across degree programs, the understanding that EBP also requires continuation and monitoring, "Where policing strategies are implemented based on research into specific areas and outcomes are continuously monitored and researched so that improvements can be made." (Participant 17). This theme was predominantly addressed by PCDA and DHEP students.

Piza and Welsh (2022) express the importance of developing EBP with monitoring and assessing EBP application. In the research project, primarily officers belonging to PCDA and DHEP acknowledged this aspect of EBP. Further, Rogers, Pepper, and Skilling (2022) show that 'student officers' present a significantly higher overall understanding of EBP. The study demonstrates higher knowledge of EBP among students and academic student officers.

Palmer, Kirby, and Coleman (2019) express the need for professionalisation around EBP. This research conducted ultimately lends to this notion. The higher overall comprehension of EBP with professionalised entry routes suggests that a professional agenda towards EBP may be key to increasing efficacy within response and the police force. Rogers, Pepper, and Skilling (2022) researched degree-based entry routes, concluding that these areas showed the highest uptake in EBP. They propose two key reasons for a higher overall understanding of EBP within these entry routes. Officers in these entry routes receive more subject-specific training in EBP as part of their training framework (Rogers, Pepper, and Skilling, 2022). Further to this, the study proposes that the leadership within these entry routes is a key factor, stating that the

different types of leaders and support needed to present officers through this entry route are significant factors in officer uptake of EBP. The idea of leadership being key to EBP uptake is reflected in this researcher's literature review and by Telep and Lum (2014), stating that leadership is the fundamental directive in EBP uptake.

Table 13 shows the analysis of what participants state would increase confidence using EBP. There is consistently a preference within the research, showing that most participants feel that they could improve their confidence using EBP with training and reference points (Table 13/ Figure 13). This is reflected across all areas of service. 73% of response participants, 86% of Operations, 89% of staff, and 90% frontline participants all stated they could improve confidence with EBP. Although response has the highest number of participants stating further training is not required to improve confidence, 73% is still a significant majority of participants. 45% of all response participants chose 'In person/ on duty training' in this question. In-person training was the preferred means by all areas of service, 59% Operations, 40% Frontline, and 33% of all staff participants selecting 'In person/ on duty training'. The second ranking preferred method overall was 'Documentation/ reference points on force systems' (Table 13/ Figure 13).

Participants were asked if further training is necessary (Table 12/ Figure 12). Response participants had a close to even split across 'Yes', 'No', and 'Not sure'. Table 12 shows that 70% of participants either feel they do or are not sure if they need further training in EBP, which closely reflects the Response participants 73% positive answer to a need for improving confidence within EBP. 90% of frontline participants stated yes or not sure, also reflecting the 90% positive answers in need of improvement in confidence. Operations show 89%, again reflecting 86% participant need for increasing confidence. Finally, the staff role presented 'Yes' or 'Not sure' and a rate of 78%, close to 89%, reflected in the need for improvement in confidence (Table 12/ Figure 12). It is statistically reasonable to state there is a correlation between confidence levels and the further need for training within EBP. Both areas show that participants' perceptions of these areas are in significant need of improvement.

Hunter, May, and Hough (2018) show that those in supervisor positions are increasingly showing interest in evidence-based policing, but ultimately, the directive from the College of Policing around EBP needs to be reformed to enable better

standards of training. This is reflected by Motsamai and Kishore-Raga (2022), who express the need for complete reform with EBP at the centre and with structured training, in hopes to re-align police culture along with it. This research project resonates with these previous studies. There is a need for development in training. However, there is a lack of academic studies to indicate the best method of EBP delivery and force uptake.

Conclusion

Participants presented themes and codes within the definition of EBP. The themes are reflective of similar academic works that found unity through a definition of EBP from the theme of 'what works', this and other themes identified within this research project, along with a structured framework is presented. There is also a defined re-occurring misinterpretation of EBP identified through thematic analysis of qualitative data. When compared to the department, Response presented the lowest knowledge base, with most departments having similar knowledge levels, except for Crime/ CID and PVP, being the highest participants with knowledge of EBP, by department. 1 in 5 participants lacks knowledge of EBP. This is similar to other forces, as addressed in the literature review. PCDA and DHEP all show 100% knowledge of EBP, significantly higher than other entry routes. Those participants also consider the necessity of continuous study within the definition of EBP, aligned with a professionalisation agenda towards EBP, to increase efficacy. Within further literature, leadership and subject-specific education are presented as the most influential factors for higher EBP knowledge.

Most departments show a neutral level of confidence, whereas Response participants show significantly less confidence in using EBP within their respective roles. PVP has the highest confidence in using EBP, and of those with correct definitions, PVP participants show the most specifically applied usage of EBP, and overall, based on the data analysed by department, show the most efficient users of EBP. Support by teams and supervisors is shown in this research and available literature to be the most impactful on EBP uptake. Most areas of service hold high opinions of EBP value within their roles, but this is not reflected in Response, who show the lowest perceived value of EBP. Cross-comparison between value and usage

shows that Response is consistently low-scoring in key areas of EBP. There is a Lack of research in this correlation between variables; the literature shows leadership and EBP input in academic training is the prominent reason for PCDA and DHEP participants showing the highest efficacy in EBP.

Response officers consistently present a lower use of EBP, which aligns with the confidence levels in EBP. As identified in this research, there is an identifiable relationship between these variables. The actual usage of EBP varies between areas of service, but all departments are more likely to answer in the negative on a Likert scale, with PVP being the only department to use EBP often.

40% of all participants faced barriers using EBP; close to half of all barriers were noted as being related to lack of support from participants' teams and supervisors. EBP requires support, but also time to implement effectively. EBP is not a simple, easily accessible tool. The data across ranks PC and PS are very similar, with PC's providing an overall well-rounded definition of EBP, by a minor number, when PCs belong to degree-based entry routes. Limited data prevents analysis against other ranks, however. A significant number of participants across all areas of the service have stated they would benefit from more training. They also reflect very similar answers to what would increase confidence levels. Reform in training and police culture is echoed within available literature, although further research and support from training departments are needed to identify the specifics of a training reform. Leadership and subject-specific tutelage may be key, as evidenced in the literature.

With comparison between this primary research and the limited available academic literature, this paper must conclude positively on this manuscript's original hypothesis, as the data are consistently reflective of the hypothesis. The data consistently shows Response underperforming in several key areas that define efficacy within this framework. Specialist roles within the police force, namely 'Crime/CID' and 'Protecting Vulnerable People', present a significantly higher score across all areas of the data. However, this is not reflected when comparing against entry routes as opposed to department or area of service. A major point of analysis in this project has been identifying the higher positive responses and detailed open answers provided by PCDA and DHEP officers. When response officers identify as belonging to PCDA or DHEP, they score mostly positively in the data set, and thus, the

entry route holds more stature in defining perceptions of EBP than department. Based on this data analysis and current literature, this research supports the notion that PCDA and DHEP entry routes are more likely to provide a higher education in Evidence-Based Policing. This research would benefit from comparison across wider sample sizes and forces. Although some data were deemed significant and generalizable ($P < .05$), much of the data is not reflective of the population. In line with the ethos of evidence-based policing, this research also needs an evidence base for comparison, but this work is a step towards closing the gap.

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