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RESEARCH ARTICLE

Developing a psychometrically valid scale to assess entrepreneurial behaviour of Makhana growers

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Abstract

Entrepreneurial behaviour is a vital factor influencing the growth and sustainability of agribusiness ventures. This study aimed to develop and validate a standardized scale to assess the entrepreneurial behaviour of makhana (foxnut) growers. A structured approach based on Likert's summated rating scale was used, delineating six key dimensions *viz.,* innovativeness, risk-bearing ability, decision-making ability, achievement motivation, self-confidence and management orientation. Initially, 70 statements were formulated and refined through expert validation, narrowing them down to 42 relevant statements. Item analysis was conducted using a t-test on a sample of 60 makhana growers, leading to the selection of 25 statements based on a minimum t-value of 2.05. Reliability was assessed using the split-half method, yielding Cronbach's alpha values of 0.909 and 0.910 for the two halves with an overall Guttman split-half coefficient of 0.945, demonstrating high internal consistency. Content validity was established through expert judgment, while a correlation matrix analysis confirmed moderate inter-item correlations, ensuring construct validity. The developed scale provides a reliable tool for assessing entrepreneurial traits among makhana growers and can guide policy interventions, capacity-building initiatives and further research in agricultural entrepreneurship.

Keywords: aachievement motivation; entrepreneurial behaviour; makhana cultivators; reliability; validity

Introduction

Entrepreneurship serves as a cornerstone for economic growth and technological advancement in developing economies, which renders a significant contribution to societal progress and development (1, 2). In India's agricultural sector, entrepreneurship development has emerged as a vital pathway for addressing critical challenges such as unemployment, income generation and optimal resource utilization (3). Among various agricultural enterprises, makhana cultivation and processing has emerged as a distinctive venture particularly in Bihar, which contributes over 85 % of India's total makhana production (4). Makhana is an important aquatic cash crop with significant commercial potential, gaining increasing attention due to its nutritional properties particularly its high protein content, presence of antioxidants and essential amino acids like arginine and lysine alongside its rising demand in both domestic and international markets (4). With minimal land requirements and the ability to utilize existing water bodies, makhana cultivation represents an economically viable enterprise that can provide both full-time and part-time employment opportunities to rural communities. Analyzing entrepreneurial behaviour is essential, as it significantly influences enterprise development. Several qualities shape an entrepreneur's behaviour such as innovativeness, financial motivation, self-efficacy and achievement orientation (5). These behavioural aspects are particularly important for the cultivation of makhana given the unique hurdles and opportunities associated with its production and commercialization.

Understanding the entrepreneurial behaviour of makhana growers is crucial for several reasons. First, entrepreneurial behaviour is highly influenced by individual, social and experiential factors (1). Second, examining these behavioural patterns can help identify and study successful entrepreneurs, which in turn can aid in formulating government policies along with designing effective training programs (6).

This study aims to analyze the entrepreneurial behaviour of makhana growers, focusing on key behavioural dimensions that contribute to enterprise success such as innovation, risk-taking ability, decision-making skills, achievement motivation and leadership. The findings will be valuable for various stakeholders including financial institutions, agricultural extension services and policymakers in their efforts to promote and support makhana entrepreneurship development. Additionally, the study will construct and standardize a comprehensive scale to measure entrepreneurial behaviour by identifying the key behavioural attributes, developing relevant indicators, well as ensuring the

reliability and validity of the scale. It will also bridge the gap by developing a psychometrically sound scale that captures dimensions like market orientation, financial management and adaptability to new technologies.

Material and Methods

The present study followed the Likert method of summated rating (7) to develop the desired scale for measuring the entrepreneurial behaviour of makhana growers. A summated rating scale consists of multiple statements, each carrying approximately equal measurement value. Respondents indicate their level of agreement or disagreement with each statement and the responses are assigned numerical scores. This method was chosen to avoid relying on a single statement representing complex entrepreneurial traits. Instead, multiple statements indicate different dimensions of entrepreneurial behaviour including innovativeness, risk-bearing ability, decision-making ability, achievement motivation, self-confidence and management orientation (6).

The following steps were undertaken for constructing the Likert-type scale to assess entrepreneurial behaviour among makhana growers:

Item Collection

The entrepreneurial behaviour constructs were identified as key drivers governing the makhana growers decision-making processes. Initially, an extensive literature review and expert consultations were conducted to generate a comprehensive pool of statements related to entrepreneurial behaviour. These statements were derived from academic journals, books, bulletins and expert discussions, ensuring their relevance to the study context.

Editing the statements

These statements were edited as per the 14 criteria (8-10) which are summarized as: Avoid statements referring to the past, factual or interpretable statements and those with multiple interpretations. Irrelevant statements, those likely to be endorsed by almost everyone or no one and statements that do not cover the full range of the scale were also excluded. The language used was kept simple, clear and direct with statements not exceeding 20 words and containing only one complete thought. Universals such as "all," "always," "none" and "never" as well as words like "only," "just" and "merely" were used cautiously. Additionally, simple sentences were preferred over compound or complex ones while double negatives and confusing words were avoided. After applying these criteria, 28 out of 70 statements were eliminated due to redundancy, ambiguityor irrelevance; leaving 42 statements that were included in the Performa.

Expert Evaluation of Raw Statements for Relevancy Test

The proforma containing the statements were evaluated using a three-point continuum: Most Relevant (HR), Relevant (R) and Least Relevant (LR). These statements were shared via email, Google Forms and personal distribution to subject matter experts from agricultural universities, research institutes and extension education sectors. Experts were requested to review the statements, suggesting additions or deletions as necessary. Out of 160 experts approached, 78 provided their responses. The statements were refined and modified based on their feedback to incorporate their suggestions. After rigorous analysis, a final set of 42 statements was retained. These finalized statements were then administered to the selected makhana growers for further evaluation and analysis.

Selection of items

The response of judges was tabulated and analyzed to work out “Relevancy percentage”, “Relevancy weighted” and “Mean relevancy score” for all the statements.

Relevancy Percentage (RP)

It was worked out by summing up the scores of "Very relevant" and "relevant" categories, which were converted into percentages.

The calculated value of RP was found in the 44.90 (minimum) to 98.98 (maximum) percentages.

Relevancy Weightage (RW)

The range of actual score obtained to the maximum possible obtainable score by each respondent. The calculated value of RW was found in the range of 0.55 (minimum) to 0.90 (maximum).

Mean relevancy score

It was obtained by the standard formula, with values ranging from 1.65 to 2.69. The overall mean relevancy score (OMRS) was 2.29.

Final inclusion of statements

Using these three criteria, the statements were screened for relevancy. Accordingly, statements having relevancy percentage > 70, relevancy weightage > 0.70 and overall mean relevancy score >2.29 were considered for the final selection of statements (11). Accordingly, 42 statements were selected, suitably modified and rewritten per the experts' comments (Table 1).

Item analysis

A structured questionnaire comprising 42 statements was developed and responses were collected from 60 makhana growers outside the sample area. Farmers were selected based on their involvement in makhana cultivation. Respondents were asked to express their level of agreement using a five-point Likert scale, i.e., Strongly Agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1) for positive statements, with reverse scoring applied to negative statements. Each respondent's overall entrepreneurial behaviour score was computed by summing individual item scores. Respondents were then ranked in descending order based on their total scores. For item analysis, the top 25% and bottom 25% of respondents were selected, forming high and low groups to evaluate each statement's discriminatory power (8). 60 farmers surveyed used the highest-scoring 15 and lowest-scoring 15 for item evaluation. The critical ratio (t-value) was calculated to determine how much each statement differentiated between these two groups, ensuring the scale's effectiveness in measuring entrepreneurial behaviour among makhana growers.

The calculated t-value was found to be distributed from 1.53 to 7.37. Later, the statements with a t value of 2.05 and above were considered for final inclusion. These 25

Table 1. Selection of statements based on judges (n=78): Relevancy Weightage (RW), Most Relevancy Score (MRS) and Relevancy Percentage (RP)

Sl.no.	Statements	RW	MRS	RP
	Innovativeness			
1	I actively seek information about new makhana cultivation techniques.	0.82	2.45	89.19
2	I am willing to experiment with new varieties of makhana seeds.	0.83	2.49	91.89
3	I frequently discuss innovative farming practices with other makhana growers.	0.82	2.45	93.24
4	I am open to adopting new technologies in makhana cultivation, even if they differ from traditional methods.	0.59	1.77	52.70
5	I regularly attend workshops and training sessions on improvements in makhana cultivation.	0.60	1.80	59.46
6	I am interested in exploring value-added products from makhana.	0.71	2.12	71.62
7	I actively look for ways to improve the efficiency of my makhana harvesting process.	0.59	1.78	58.11
8	I am willing to invest in new equipment to enhance my makhana production.	0.65	1.95	70.27
9	I often think about how to diversify my income sources within the makhana industry.	0.81	2.42	90.54
10	I am open to collaborating with researchers to test new makhana cultivation methods.	0.69	2.07	78.38
	Decision-making ability			
11	I make independent decisions about when to harvest my makhana crop.	0.80	2.39	89.19
12	I consult multiple sources before deciding on fertilizer applications for my makhana ponds.	0.66	1.99	68.92
13	I am confident in choosing the best market to sell my makhana produce.	0.84	2.53	95.95
14	I carefully evaluate the pros and cons before adopting a new makhana cultivation practice.	0.85	2.55	97.30
15	I make timely decisions about pest control measures in my makhana ponds.	0.73	2.18	78.38
16	I can quickly adjust my farming plans when faced with unexpected weather conditions.	0.82	2.45	93.24
17	I seek advice from agricultural experts but make the final decisions myself.	0.79	2.38	89.19
18	I am comfortable making decisions about loan applications for my makhana business.	0.78	2.35	87.84
19	I systematically plan my makhana production cycle at the beginning of each season.	0.65	1.96	66.22
20	Based on scientific advice, I make informed decisions about water management in my makhana ponds.	0.68	2.03	71.62
	Risk bearing			
21	I **a**m willing to try a new makhana variety even if it hasn't been widely adopted in my area yet.	0.80	2.39	90.54
22	I can handle the uncertainty associated with experimenting with new cultivation techniques.	0.82	2.46	94.59
23	I am prepared to invest in modern equipment for makhana processing, even if it requires a loan.	0.59	1.78	63.51
24	I am comfortable expanding my makhana cultivation area, even if it means increased financial responsibility.	0.61	1.84	62.16
25	I see market price fluctuations as challenging rather than threatening my makhana business.	0.61	1.84	60.81
26	I am willing to store my makhana produce to sell when prices are more favourable, even if it means delayed income.	0.78	2.34	89.19
27	I can manage the risks associated with adopting organic makhana cultivation methods.	0.83	2.49	94.59
28	I am open to entering buyer contracts, even committing to specific quality standards.	0.64	1.92	68.92
29	I am willing to invest time and resources in learning new makhana cultivation and processing skills.	0.63	1.89	66.22
30	I can handle the stress of trying innovative marketing strategies for my makhana product.	0.65	1.95	70.27
	Achievement motivation			
31	I set challenging goals for my makhana yield each season.	0.80	2.39	90.54
32	I constantly strive to improve the quality of my makhana produce.	0.85	2.55	95.95
33	I am driven to make my makhana farm a model for others in the region.	0.79	2.38	89.19
34	I feel a sense of pride when I overcome obstacles in my makhana farming business.	0.79	2.38	91.89
35	I am motivated to explore new markets for my makhana produce.	0.84	2.51	93.24
36	I derive satisfaction from implementing efficient farming practices in my makhana cultivation.	0.78	2.34	93.24
37	I am eager to learn about the latest makhana farming and processing developments.	0.86	2.59	95.95
38	I am driven to diversify my makhana product range to increase profitability.	0.82	2.47	97.30
39	I am accomplished when I successfully implement a new technique in makhana cultivation.	0.83	2.50	97.30
40	I am motivated to network with other successful makhana growers to enhance my knowledge and skills.	0.64	1.92	67.57

	Self confidence			
41	I believe in my ability to successfully manage my makhana farming business.	0.61	1.84	58.11
42	I am confident in negotiating prices for my makhana produce with buyers.	0.81	2.43	93.24
43	I trust my judgment when making important decisions about my makhana farm.	0.85	2.54	95.95
44	I feel capable of solving most of the problems that arise during my makhana cultivation.	0.83	2.50	94.59
45	I am confident in my ability to adapt to changing market demands for makhana.	0.59	1.76	55.41
46	I believe I can successfully implement new technologies in my makhana farming practices.	0.81	2.42	97.30
47	I am sure of my ability to produce high-quality makhana consistently.	0.78	2.34	90.54
48	I feel confident in my skillstraining new workers in makhana cultivation techniques.	0.85	2.54	93.24
49	I trust my ability to manage the financial aspects of my makhana farming business effectively.	0.59	1.78	58.11
50	I am confident in representing my interests in farmer associations or cooperatives.	0.65	1.95	70.27
	Management orientation			
51	I develop a detailed cultivation plan for my makhana ponds before each season.	0.58	1.73	54.05
52	I keep accurate inputs, yields and sales records for my makhana production.	0.82	2.47	94.59
53	I regularly review and update my makhana business plan.	0.81	2.43	90.54
54	I plan my cash flow to ensure the timely availability of funds for makhana cultivation activities.	0.80	2.39	91.89
55	I set both short-term and long-term goals for my makhana farming business.	0.81	2.42	91.89
56	I closely monitor water quality parameters in my makhana ponds.	0.70	2.09	79.73
57	I follow recommended best practices for makhana seed selection and planting.	0.65	1.96	71.62
58	I implement integrated pest management techniques in my makhana cultivation.	0.82	2.47	91.89
59	I optimize organic matter and fertilizers based on soil and water testing.	0.82	2.46	95.95
60	I time my makhana harvesting based on market demand and crop maturity.	0.83	2.50	94.59
61	I actively seek information about makhana market trends and prices.	0.67	2.01	70.27
62	I explore multiple channels to sell my makhana produce.	0.67	2.01	72.97
63	I focus on producing makhana varieties that have high market demand.	0.82	2.45	97.30
64	I am keen on building long-term relationships with makhana buyers and processors.	0.81	2.42	89.19
65	I consider value addition opportunities to increase the profitability of my makhana produce.	0.85	2.55	97.30
66	I participate in agricultural fairs to showcase my makhana products and network with potential buyers.	0.69	2.08	79.73
67	I am open to forming or joining farmer-producer organizations to improve my bargaining power in the makhana market.	0.69	2.08	74.32
68	I brand my makhana products to differentiate them in the market.	0.79	2.38	86.49
69	I use digital platforms to market my makhana products when possible.	0.81	2.43	90.54
70	I regularly communicate with my customers to understand their needs and preferences for makhana products.	0.83	2.50	94.59
	OMRS: 2.25			

Table 2. Item analysis of statement by farmers from the non - sample area

Sl.no.	Statement	t-Value
1.	I can quickly adjust my farming plans when faced with unexpected weather conditions.	8.50
2.	I can manage the risks associated with adopting organic makhana cultivation methods.	7.25
3.	I set challenging goals for my makhana yield each season.	6.26
4.	I constantly strive to improve the quality of my makhana produce.	6.20
5.	I feel a sense of pride when I overcome obstacles in my makhana farming business.	6.24
6.	I derive satisfaction from implementing efficient farming practices in my makhana cultivation.	6.24
7.	I am driven to diversify my makhana product range to increase profitability.	7.11
8.	I trust my judgment when making important decisions about my makhana farm.	6.61
9.	I feel capable of solving most of the problems that arise during my makhana cultivation.	10.58
10.	I feel confident in my skills in training new workers in makhana cultivation techniques.	8.50
11.	I am sure of my ability to produce high quality makhana consistently.	8.89
12.	I believe I can successfully implement new technologies in my makhana farming practices.	7.11
13.	I keep accurate inputs, yields and sales records for my makhana production.	8.50
14.	I regularly review and update my makhana business plan.	7.11
15.	I plan my cash flow to ensure the timely availability of funds for makhana cultivation activities.	6.61
16.	I set short- and long-term goals for my makhana farming business.	6.86
17.	I implement integrated pest management techniques in my makhana cultivation.	6.86
18.	I optimize organic matter and fertilizers based on soil and water testing.	8.89
19.	I time my makhana harvesting based on market demand and crop maturity.	8.50
20.	I focus on producing makhana varieties that have high market demand.	6.26
21.	I am keen on building long-term relationships with makhana buyers and processors.	7.48
22.	I brand my makhana products to differentiate them in the market.	10.69
23.	I consider value addition opportunities to increase the profitability of my makhana produce.	7.37
24.	I use digital platforms to market my makhana products when possible.	11.22
25.	I regularly communicate with my customers to understand their needs and preferences for makhana products.	8.29

statements were quantified in the final scale (Table 2).

Standardization of the scale

The developed scale was further standardized by establishing its reliability and validity.

Reliability

Reliability is the ability of a test instrument to generate consistent results from one set of measures to another. A good instrument should evoke valid responses and yield nearly identical results if administered twice to the same respondents (12). According to Karlinger (13) reliability is the accuracy or precision of a measuring instrument. The split half method was used for assessing internal consistency of the scale developed. The scales were split into two halves based on ransom numbers and the sets of statements were administered to 60 selected numbers of respondents. Thus, two sets of scores were obtained. The half-test reliability coefficient was calculated using Cronbach's Alpha in SPSS 24. The alpha value of set 1 was found 0.909 and set 2 was 0.910whereas the correlation between these two was 0.898. Thus, the reliability coefficient indicated high internal consistency of entrepreneurial scale constructed for the study. The result was further confirmed by using the Guttman split- half Coefficient, which was also found to be 0.945 (Table 3). It may be said that the scale is reliable for measuring the entrepreneurial behaviour of makhana growers.

*V*alidity

Content validity refers to the representativeness and adequacy of the content in measuring entrepreneurial behaviour. The edited statements were presented to 78 subject-matter experts from universities and research institutions for validation. The experts reviewed the statements and suggested modifications, additions or deletions. Their feedback was incorporated to refine the scale, ensuring it accurately captured entrepreneurial behaviour dimensions. Based on expert input, 25 items were finalized, confirming an appropriate mix of positive and negative statements. These statements were arranged randomly to prevent response bias and to enhance the scale's reliability. Out of the 25 statements, 5 were negatively framed to guarantee a balanced response distribution.

Scoring technique

The final set of 25 statements was randomly arranged to minimize response biases and maximize scale validity. Each statement was rated on a five-point Likert continuum, *viz.*, Strongly Agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1) for favourable (positive) statements, whereas the scoring was reversed for unfavourable (negative) statements (1-5). This structured scoring method ensures that responses are systematically quantified, facilitating an accurate assessment of entrepreneurial behaviour among makhana growers.

For this study, perceptions are as follows: Strongly Agree (SA), Agree (A), Disagree (UN), Disagree (D) and Strongly Disagree (SD). A range was identified with the lowest score of 25 (rating 1 on each of 25 items) and the highest possible score of 125 (rating 5 on each of 25 items) (Table 4).

Table 3. Reliability test (split - half method)

Reliability statistics			
Cronbach's Alpha	Part 1	Value	.909
		N of Items	13[a]
	Part 2	Value	.910
		N of Items	12[b]
	Total N of Items		25
	Correlation Between Forms		.898
Spearman-Brown Coefficient	Equal Length		.946
	Unequal Length		.946
	Guttman split-half Coefficient		.945

a. The items are 1,3,5,7,9,11,13,15,17,19,21,23,25

b. The items are 2,4,6,8,10,12,14,16,18,20,22,24

Table 4. Final statements included in the entrepreneurial behaviour scale

Sl. No.	Statement	SA (5)	A(4)	UD(3)	DA(2)	SDA(1)
1.	I can quickly adjust my farming plans when faced with unexpected weather conditions.					
2.	I can Manage the risks associated with adopting organic makhana cultivation methods.					
3.	I set challenging goals for my makhana yield each season.					
4.	I constantly strive to improve the quality of makhana products.					
5.	I feel a sense of pride when I overcome obstacles in my makhana business.					
6.	I derive satisfaction from implementing efficient farming practices in my makhana cultivation.					
7.	I am driven to diversify my makhana product range to increase profitability.					
8.	I trust my judgment when making important decisions about my makhana farm.					
9.	I feel capable of solving most of the problems that arise during my makhana cultivation.					
10.	I feel confident in my skills in training new workers in makhana cultivation techniques.					
11.	I am sure of my ability to produce high-quality makhana consistently.					
12.	I believe I can successfully implement new technologies in my makhana farming practices.					
13.	I keep accurate inputs, yields and sales records for my makhana production.					
14.	I regularly review and update my makhana business plan.					
15.	I plan my cash flow to ensure the timely availability of funds for makhana cultivation activities.					
16.	I set short- and long-term goals for my makhana farming business.					
17.	I implement integrated pest management techniques in my makhana cultivation.					
18.	I optimize organic matter and fertilizers based on soil and water testing.					
19.	I time my makhana harvesting based on market demand and crop maturity.					
20.	I focus on producing makhana varieties that have high market demand.					
21.	I am keen on building long-term relationships with makhana buyers and processors.					
22.	I brand my makhana products to differentiate them in the market.					
23.	I consider value addition opportunities to increase the profitability of my makhana produce.					
24.	I use digital platforms to market my makhana products when possible.					
25.	I regularly communicate with my customers to understand their needs and preferences for makhana products.					

A correlation matrix was checked to identify the strength and direction of relationships between the selected items, allowing us to see which items have high, moderate or minimal correlation with each other. This assessment is crucial for data analysis, which aids in understanding the potential redundancies in the final scale prior to further analysis or application. Results revealed that the final selected statements were moderately correlated. In scale construction, a moderately correlated correlation matrix is desirable because high correlations between items can lead to multicollinearity, making it difficult to interpret the results and potentially causing statistical issues. Low correlations between items may indicate that they are not measuring the same construct which can lead to a lack of coherence in the scale. Moderate correlations allow for a clear factor structure to emerge, making it easier to identify the underlying dimensions of the construct. A moderately correlated matrix tends to produce more reliable scales, as the items assess interconnected yet distinct aspects of the construct. It also provides evidence for the scale's construct validity, suggesting that the items measure a coherent and meaningful construct. A moderately correlated correlation matrix is desirable in scale construction because it balances the need for item coherence with item distinctiveness, ultimately leading to a more reliable, valid and interpretable scale.

Results and Discussion

The final validated scale for measuring the entrepreneurial behaviour of makhana growers demonstrated strong reliability and validity. Reliability analysis, using the split-half method, yielded a Cronbach's alpha of 0.909 and 0.910 for Set 1 and Set 2, with a correlation coefficient of 0.898 between them. Additionally, the Guttman split-half Coefficient was 0.945, reinforcing the scale's internal consistency (14). Internal consistency, an essential criterion for ascertaining the scale's reliability, ensures that all items measure the same underlying construct, thereby minimizing the measurement error. High internal consistency indicates that the items on the scale consistently assess entrepreneurial traits like innovation, risk-taking and decision-making thereby offering a reliable measure of entrepreneurial behaviour among makhana growers. The moderate inter-item correlations observed are desirable for construct validity, as they indicate that while items are related, they capture distinct dimensions of entrepreneurial behaviour without redundancy. Content validity was ascertained through expert evaluation, ensuring that the scale accurately reflects the entrepreneurial dimensions of makhana cultivation. The moderate correlations observed in the correlation matrix are desirable as they indicate that the items are sufficiently distinct yet related, ensuring a comprehensive assessment of entrepreneurial traits without overlap. Although these results establish the scale's robustness, limitations include the scale's development within a specific population of makhana growers, may potentially constrain its applicability to other agricultural contexts. Future studies should aim to validate the scale across diverse agricultural sectors and regions to enhance its generalizability.

Conclusion

This study successfully developed and validated a reliable scale to measure the entrepreneurial behaviour of makhana growers. It provides a structured approach for assessing entrepreneurship in makhana farming by incorporating key behavioural dimensions. The findings have significant implications for agricultural policymakers, extension agencies and researchers endeavouring to promote agripreneurship among smallholder farmers. Future research can further refine the scale and explore its applicability across diverse agricultural enterprises beyond makhana cultivation. The insights gained from this study can serve as a foundation for designing targeted training programs, financial interventions and policy measures to enhance entrepreneurial capabilities in the agricultural sector.

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Authors' contributions

AW conducted extensive field visits and collected primary data, ensuring the accuracy and reliability of the research process. RKD conceptualised the research framework, provided critical inputs throughout the study and approved the final manuscript. AV contributed to the refinement of the research concept and performed formal editing of the manuscript. IM was instrumental in revising the manuscript, ensuring clarity and coherence. NRM assisted in summarising the findings and revising the manuscript for consistency. VC played a key role in editing and enhancing the manuscript. SS supported summarising and revising the manuscript, contributing to its final quality.

Compliance with ethical standards

Conflict of interest: The authors do not have any conflict of interest to declare.

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