

EFFECTIVENESS OF INDIVIDUALIZED FEEDBACK ON ACADEMIC PERFORMANCE OF FIRST-YEAR B.SC. NURSING STUDENTS

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ABSTRACT

Background: Structured, individualized feedback after formative assessment is not routinely provided in many nursing colleges in a current scenario. Students remain unaware of their strengths and weaknesses and which affects their interest, motivation, confidence and academic performance. **Objective:** To assess the effectiveness of individualized feedback on academic performance and its significance. **Materials and Methods:** A Quasi-experimental (Non-randomized, no control group) study was conducted in the Department of Physiology at a government nursing college in Chhatrapati Sambhaji Nagar, involving 44 first-year B.Sc. Nursing students. After a first formative assessment, each student received individualized verbal and written feedback of 30 minutes. A second formative assessment was conducted after one month. The mean score of first formative assessment and second formative assessment was compared by using paired t – test. Cross-sectional post-intervention survey was done by using five point Likert scale (3-item, 5-point Likert scale to gather qualitative student perception). Self-administrated questionnaires were Q1. Do you agree that your performance in the second examination improved? Q2. Do you agree that the improvement in performance was due to the individualized feedback given? Q3. Do you agree that the individualized feedback would be useful to you in future examinations? Data was collected and analyzed on Microsoft Excel and AI tool by using frequency and percentage. **Results:** The mean score increased from 10.36 ± 1.16 in the first formative assessment to 14.95 ± 2.05 in the second formative assessment. The mean improvement was 4.59 marks. Paired t-test showed a highly significant improvement in students' performance in the second formative assessment ($t = 16.72$, $df = 43$, $p < 0.0001$). On the perception survey, 93.18% of students (41/44) agreed their performance improved after the second assessment (mean Likert score 4.16 ± 0.61); 81.40% (35/43) attributed the improvement to individualized feedback (mean 3.95 ± 0.79); and 86.36% (38/44) felt individualized feedback would be useful in future examinations. **Conclusion:** Individualized verbal and written Feedback showed significant improvement in 1st Year nursing students performance. This study also states that individualized feedback would be useful to in future examinations so should be conducted regularly after each formative assessment to help the student to achieve desirable objectives.

INTRODUCTION

In current practice, it is often not possible to provide personalized feedback to every student after each formative assessment. In many medical and nursing colleges, regular feedback sessions not conducted after any formative assessments. so students do not get the idea students of their strengths and

weaknesses of a subject or topic. This lack of feedback makes it difficult for students to achieve desirable learning objectives. Medical and nursing teachers themselves are often less aware of the importance of delivering individualized feedback regularly. Depending solely on the marks awarded, students may develop either a positive or a negative attitude toward the curriculum; poor performance in

the exams. As many students reside in the hostel away from their home, combine it causes emotional difficulties, loss of confidence, motivation and further decline in their performance.

Feedback is an integral part of formative assessment and, when provided immediately helps the student to reconstruct their knowledge, regain confidence, and keeps them motivated for further learning. Individualized feedback plays vital role for nurses in as it can improve their efficiency, knowledge, and teamwork.^[1] When properly structured and constructive, verbal and written feedback delivered to the students, it helps the student to achieve their learning goals, and it is considered as a good indicator of teaching. Ultimately individualized verbal and written feedback contributing a lot to produce competent nursing workforce and better healthcare for society.^[2]

The concept of feedback originated in eighteenth-century British economic theory, though it was not formally named at that time. It was first used systematically in the 1940s by rocket engineers as an information-driven mechanism to achieve system objectives, and the term subsequently expanded into education and psychology through the 1980s.^[3] In an educational context, feedback refers to information provided by an external source about specific facets of an individual's performance, used to improve and adjust subsequent activities.^[4] It plays an important role in learning by helping students to understand both their performance and the reasons behind their scores, while also guiding them on how to improve.^[5] Feedback can be delivered informally (day-to-day written or oral feedback), through technology-mediated or online channels, or formally as structured formative feedback aimed at improving learning and progress; summative feedback, by contrast, is expressed only as marks, grades, or rank.^[6,8] According to Wiggins (as cited in McMillan), effective feedback relates performance to standards, indicates progress and corrective steps, is given frequently and immediately, and is specific, descriptive, and focused on key errors — findings echoed by Shute (2008), who found effective feedback to be specific, clear, elaborated, and relatively simple.^[7] Appropriate feedback, used alongside other sources of information to review and improve training programs, significantly contributes to learners' competence and confidence by helping them recognize the gap between actual and desired performance.^[8]

The present study was conducted to assess the effect of individualized verbal and written feedback on nursing students' academic performance and their perception of its usefulness. Objective: To assess the effectiveness of individualized feedback to nursing undergraduates in improving performance in future examinations.

MATERIALS AND METHODS

Study Design and Setting: A Quasi-experimental (Non-randomized, no control group) study was conducted with A cross-sectional interventional study over a period of 5 months in the Department of Physiology at a government nursing college in Chhatrapati Sambhaji Nagar.

Institutional Ethical Committee clearance was obtained prior to the start of the study. Written informed consent was obtained from all participating students, and confidentiality of responses was maintained throughout.

Study Population and Sampling:

Forty-four first-year B.Sc. Nursing students of a government nursing college, Chhatrapati Sambhaji Nagar, were enrolled. no separate sample-size calculation was performed as the entire eligible cohort was included.

Inclusion Criteria: First-year B.Sc. Nursing students willing to participate in the study.

Exclusion Criteria: Students unwilling to participate in the study.

Methodology:

A first formative assessment (short-answer and long-answer questions, 25 marks) was conducted and results were displayed. Each student then received an individualized verbal and written feedback session lasting 30 minutes, during which strengths, areas for improvement, and a concrete action plan and strategy for the next examination were discussed. After one month, a second formative assessment on a different topic was conducted and results were displayed. The overall approach followed the Pendleton feedback model.^[9,2]

Study Instrument and Data Collection:

Data were collected using a self-administered questionnaire which was validated by experts. Comprising three items, each rated on a 5-point Likert scale (Strongly agree = 5; Agree = 4; Neither agree nor disagree = 3; Disagree = 2; Strongly disagree = 1;)

Q1. Do you agree that your performance in the second examination improved?

Q2. Do you agree that the improvement in performance was due to the individualized feedback given?

Q3. Do you agree that the individualized feedback would be useful to you in future examinations?

Statistical Analysis

Likert-scale responses were summarized as frequencies, percentages, and mean $\pm$ SD using Microsoft Excel and AI. Marks obtained in the first and second formative assessments were compared using the paired t-test, with $p < 0.05$ considered statistically significant.

RESULTS

Of the 44 enrolled students, all completed the perception questionnaire for Items 1 and 3; one

student did not respond to Item 2 (n = 43 for that item). The mean score increased from 10.36 ± 1.16 in the first formative assessment to 14.95 ± 2.05 in the second formative assessment. The mean

improvement was 4.59 marks. Paired t-test demonstrated a highly significant improvement in students' performance in the second formative assessment ($t = 16.72$, $df = 43$, $p < 0.0001$).

Table 1: Comparison of Marks Between First and Second Formative Assessments

Assessment	No of students(n)	Mean $\pm$ SD (/25)	Mean difference	Pair t-test	P value
1st Formative Assessment	44	10.36 ± 1.16	-	-	
2nd Formative Assessment	44	14.95 ± 2.05	4.59	16.72	<0.0001

Table 2: Summarizes the distribution of student responses to the three perception items

Item	N	Disagree/ Strongly disagree, n (%)	Neutral, n (%)	Agree/ Strongly agree, n (%)	Positive (Agree+SA), %	Mean $\pm$ SD
Q1. Performance in 2nd exam improved	44	1 (2.27%)	2 (4.55%)	41 (93.18%)	93.18%	4.16 ± 0.61
Q2. Improvement due to individualized feedback	43	3 (6.98%)	5 (11.63%)	35 (81.40%)	81.40%	3.95 ± 0.79
Q3. Feedback useful for future exams	44	1 (2.27%)	5 (11.36%)	38 (86.36%)	86.36%	-

DISCUSSION

The mean score increased from 10.36 ± 1.16 in the first formative assessment to 14.95 ± 2.05 in the second formative assessment. The mean improvement was 4.59 marks. Paired t-test demonstrated a highly significant improvement in students' performance in the second formative assessment ($t = 16.72$, $df = 43$, $p < 0.0001$). The present study demonstrated a positive perceived improvement in students' performance after receiving individualized verbal and written feedback, with 93.18% of students agreeing that their performance in the second examination had improved. The majority of students (81.40%) attributed this improvement specifically to the individualized feedback they received, and 86.36% felt such feedback would be useful in future examinations. These findings suggest that individualized feedback may have contributed in improving student's academic performance and to also it is helpful to them for future assessments.

Feedback is an essential component of effective teaching and learning, as it helps learners identify gaps between their current performance and expected learning outcomes and guides them toward appropriate corrective action. It can also be viewed as a retention strategy, helping to attenuate performance-related anxiety and reinforcing students' sense of academic support. The comparatively smaller proportion of students who did not find feedback helpful may be attributable to other factors such as difficulty adjusting to hostel life, language barriers, or having joined the course unwillingly.

These findings are broadly consistent with those of Rathobei and Dube, who found that 82.7% of nursing students agreed feedback showed them how to do better next time, 82.6% agreed it helped them understand how to improve, and 88.0% felt feedback would help improve their future performance.^[10] Similarly, Chakraborty et al. reported a significant

rise in the proportion of medical undergraduates scoring above a 50% cut-off after a second formative assessment following structured feedback, with most students describing the feedback as non-judgmental, structured, and constructive.^[2]

Gupta et al. found that structured feedback sessions helped biochemistry students recognize learning gaps (70%) and facilitated closing them (62%), with high satisfaction and support for continuing such sessions in the curriculum.^[11] Imanipour et al. similarly found written feedback to be more effective for student performance and satisfaction than verbal feedback alone, suggesting that the written component of the feedback used in the present study may have played a particularly important role.^[3]

Limitations of the study:

This study was conducted at a single center with a relatively small sample size (n = 44), limiting the generalizability of the findings. The assessment relied on a self-administered, questionnaire-based Likert scale rather than richer qualitative data; incorporating open-ended questions, interviews, or direct observation could provide a fuller picture in future work. The absence of a control group receiving no individualized feedback also limits causal inference about the effect of feedback on performance. Multi-center studies across different phases of the B.Sc. Nursing curriculum are recommended to validate and extend these findings.

CONCLUSION

Feedback plays an important role in improving student performance. Individualized feedback helped students in this cohort improve their performance, and students agreed that individualized feedback would be useful to them in future examinations.

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