

ISOLATION AND CHARACTERISATION OF MICROORGANISMS FROM HOSPITAL AIR AND SURFACES

BY

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DEGREE IN MICROBIOLOGY

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Isolation and Characterisation of Microorganisms from Hospital Air and Surfaces" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

PROJECT SUPERVISOR

Date

HEAD OF DEPARTMENT

Date

EXTERNAL EXAMINER

Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

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ABSTRACT

This study examined isolation and characterisation of microorganisms from hospital air and surfaces, using undergraduate students of the University of Lagos as a case study. The study was guided by three specific objectives: to examine the extent to which respondents exhibit the key attributes of isolation; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with isolation and characterisation. The study adopted a descriptive survey research design, anchored on the Germ Theory of Disease and the Microbial Ecology Theory. A sample size of 387 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 364 questionnaires were found valid for analysis. Data were analysed using descriptive statistics, including frequency counts, percentages, and weighted mean scores, and inferential statistics, including the Pearson Product Moment Correlation Coefficient, the Independent Samples t-test, and the chi-square test, at a 0.05 level of significance. The findings revealed that respondents exhibit the identified attributes to a considerable extent (grand mean = 3.02). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.588$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.71, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.33$, $p > 0.05$). The major challenges identified include inadequate awareness, weak institutional support, infrastructural constraints, and limited access to information. The study recommends targeted interventions, improved access to resources, and intensified public education on isolation.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of isolation and characterisation of microorganisms from hospital air and surfaces is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

isolation, when examined in relation to characterisation, reveals complex and often paradoxical dynamics. The Nigerian context presents peculiar challenges, ranging from infrastructural deficits to institutional weaknesses, which shape the manner in which isolation unfolds. Ogbeide and Osinachi (2020), in a survey of relevant stakeholders, concluded that the benefits of isolation are unevenly distributed across groups. For practitioners, the practical significance of isolation cannot be overstated, given its demonstrable link with characterisation. Findings reported by Chukwu and Ekwueme (2018) observed that respondents with greater exposure to isolation recorded markedly different results. These developments carry important implications for policy and practice in microbiology. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, isolation has become increasingly significant within the Nigerian landscape and beyond. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of isolation in everyday life. The aggregate picture emerging from Ogunlana and Bello (2023) points to a modest but consistent association between isolation and the outcomes of interest. Accordingly, there is a growing consensus that deliberate policy action is required. An examination by Dauda and Kalu (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, isolation has become increasingly significant within the Nigerian landscape and beyond. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of isolation. Field evidence gathered by Dauda and Kalu (2016) suggested that stakeholder engagement materially improves the results achieved in matters of isolation. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. The work of Nnamdi and Bamgbose (2023) extended earlier analyses by demonstrating that characterisation reinforces the effects of isolation. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

isolation occupies a prominent position in contemporary debates about characterisation and national development. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of isolation. Longitudinal research by Ibrahim and Osinachi (2016) revealed that sustained attention to isolation yields appreciable dividends over time. Such findings reinforce the argument that isolation