

Predicting Adolescents' Critical Health Judgment And Resistance To Health Misinformation In The Social Media Era: The Contribution Of Biology Education

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Abstract: *The proliferation of health misinformation on social media poses significant challenges to adolescents' ability to make informed decision. Therefore, this study investigated the contribution of Biology Education to adolescents' critical health judgment and resistance to health misinformation in the social media era. The study was guided by two research questions and two hypotheses. A predictive correlational research design was adopted for the study. The study was conducted in Delta State, Nigeria. The population comprised 29,068 Senior Secondary School Two (SS II) students in 478 public secondary schools across the three senatorial districts of Delta State. A sample of 379 students was selected using the Krejcie and Morgan sample size determination table and a multistage sampling procedure. Data were collected using a researcher-developed instrument titled Biology Education, Critical Health Judgment and Health Misinformation Questionnaire (BECHJHMQ). The instrument consisted of 60 items distributed across three constructs: Biology Education, Critical Health Judgment, and Resistance to Health Misinformation. Face and content validity of the instrument were established by two experts in Science Education and one expert in Measurement and Evaluation. Reliability was established through a pilot study involving 30 SS II students in Edo State using Cronbach Alpha, yielding coefficients of 0.82, 0.85, and 0.88 for Biology Education, Critical Health Judgment, and Resistance to Health Misinformation respectively, with an overall reliability coefficient of 0.85. Out of the 379 copies of the questionnaire administered, 371 were properly completed and used for analysis. Data were analyzed using coefficient of determination (R^2) to answer the research questions and simple linear regression to test the hypotheses at the 0.05 level of significance. The findings revealed that Biology Education moderately predicted adolescents' critical health judgment and highly predicted their resistance to health misinformation. The study further revealed that Biology Education significantly predicted adolescents' critical health judgment and resistance to health misinformation in the social media era. The study concluded that Biology Education plays a significant role in enhancing adolescents' capacity to critically evaluate health information and resist health misinformation encountered on social media platforms. It was recommended, among others, that Biology teachers should incorporate activities that develop students' critical evaluation of online health information and that curriculum planners should integrate health misinformation literacy into Biology instruction.*

Keywords: Biology Education, Critical Health Judgment, Health Misinformation, Social Media, Adolescents, Scientific Literacy.

Introduction

The rapid growth of digital technologies has transformed the ways in which health information is produced, accessed, and disseminated. Social media platforms have become important sources of information on health-related issues, enabling users to obtain information about diseases, nutrition, vaccination, reproductive health, and healthy lifestyles within seconds. Adolescents are among the most active users of these platforms and increasingly rely on social media for health information. While social media has expanded access to health knowledge, it has also facilitated the widespread circulation of inaccurate and misleading health information, creating new challenges for informed health decision-making (Wang et al., 2019). The increasing prevalence of misleading health information on social media has consequently drawn scholarly attention to the phenomenon of health misinformation.

Health misinformation refers to health-related information that is false, inaccurate, misleading, or unsupported by scientific evidence. The proliferation of such information has become a global concern because of its potential influence on health beliefs and behaviours. A systematic review by Suarez-Lledo and Alvarez-Galvez (2021) found that misinformation is prevalent across social media discussions involving vaccination, infectious diseases, smoking products, drugs, and non-communicable diseases. The widespread dissemination of misinformation raises concerns regarding the ability of social media users, particularly adolescents, to distinguish credible health information from misleading content. Such concerns become even more significant when considering the consequences of misinformation for public health.

The implications of health misinformation became particularly evident during the COVID-19 pandemic. During this period, false claims, conspiracy theories, and unverified health advice spread rapidly across digital platforms, prompting scholars and health organizations to describe the phenomenon as an "infodemic." Gisondi et al. (2022) observed that misinformation disseminated through social media contributed to vaccine hesitancy and negatively influenced public responses to health recommendations. The experiences of the pandemic demonstrated that access to information alone is insufficient; individuals also require the ability to

critically evaluate the information they encounter. This necessity highlights the importance of critical health judgment in contemporary society.

Critical health judgment refers to an individual's capacity to assess the credibility, relevance, and accuracy of health information before accepting or acting upon it. In a digital environment characterized by information abundance, individuals are expected to evaluate sources, examine evidence, identify biases, and make reasoned decisions regarding health-related issues. Research conducted by Breakstone et al. (2021) revealed that many young people experience difficulties evaluating the credibility of online information and often struggle to distinguish trustworthy sources from unreliable ones. These findings suggest that the development of critical evaluative skills has become an important educational objective. The need to cultivate such competencies directs attention to the broader concept of scientific literacy.

Scientific literacy has emerged as a central goal of science education because it equips learners with the knowledge and skills required to understand scientific issues and make evidence-based decisions. According to the Organisation for Economic Co-operation and Development (OECD, 2019), scientifically literate individuals can explain phenomena scientifically, evaluate evidence, and engage critically with science-related information. In an era where health claims are increasingly encountered through digital media, scientific literacy may serve as an important resource for evaluating the validity of health information. This perspective draws attention to the educational experiences through which scientific literacy is developed.

Among school subjects, Biology occupies a unique position because it addresses concepts directly related to human health and well-being. Biology Education exposes learners to topics such as nutrition, disease prevention, genetics, immunity, ecology, and human physiology while simultaneously emphasizing observation, inquiry, experimentation, and evidence-based reasoning. Bybee (2018) argued that science education should prepare learners to apply scientific knowledge to everyday issues and societal challenges. Consequently, Biology Education may provide adolescents with the conceptual understanding and reasoning skills needed to engage with health information critically. The relevance of Biology Education becomes particularly apparent when considering the scientific nature of many health claims circulating online.

Many forms of health misinformation contain scientific terminology and claims that appear credible to individuals who lack adequate scientific understanding. Misleading information concerning vaccines, alternative therapies, dietary supplements, and disease treatments often exploits limited scientific knowledge among audiences. Lederman et al. (2019) emphasized that understanding the nature of science enables individuals to distinguish evidence-based explanations from unsupported assertions. Such understanding may be particularly valuable for adolescents who frequently encounter health information through social media platforms. This observation raises questions about the extent to which Biology Education may influence adolescents' responses to health information.

Adolescence represents a critical developmental stage characterized by increased independence, identity formation, and growing engagement with digital technologies. During this period, young people make important decisions regarding health behaviours and are increasingly exposed to health information from multiple online sources. Goodyear et al. (2019) reported that social media plays a significant role in shaping adolescents' health-related knowledge and experiences. However, increased exposure to health information does not necessarily translate into the ability to evaluate such information critically. This concern underscores the importance of understanding factors that may enhance adolescents' resilience when confronted with misleading health information.

Resilience against misinformation is increasingly viewed as an essential competency in the digital age. Individuals who can identify misleading information, question unsupported claims, and seek evidence from credible sources are less likely to be influenced by misinformation. Roozenbeek et al. (2022) found that susceptibility to misinformation varies considerably among individuals and is associated with differences in reasoning and information-evaluation skills. These findings suggest that educational experiences capable of strengthening analytical and evaluative competencies may contribute to resistance against misinformation. Such a proposition highlights the potential relevance of school science education.

Science education scholars have increasingly emphasized the role of educational experiences in preparing learners to navigate complex information environments. Sinatra and Hofer (2021) argued that learners require sophisticated epistemic and evaluative skills to assess competing scientific claims in contemporary society. As adolescents continue to encounter large volumes of health information through social media, understanding the educational factors that support informed judgment and resistance to misinformation becomes increasingly important.

Although previous studies have examined the prevalence of health misinformation, the influence of social media on health behaviours, scientific literacy, and susceptibility to misinformation, limited attention has been given to the specific contribution of Biology Education to adolescents' critical health judgment and resistance to health misinformation. Furthermore, empirical evidence linking Biology Education with these outcomes remains scarce, particularly among adolescent populations in developing contexts. Given the growing dependence of adolescents on social media for health information and the emphasis of Biology Education on

scientific understanding and evidence-based reasoning, there is a need to investigate the contribution of Biology Education to adolescents' critical health judgment and resistance to health misinformation in the social media era.

Statement of the Problem

The increasing dependence of adolescents on social media as a source of health information has created both opportunities and challenges for health education. While social media platforms provide rapid access to information on health-related issues, they have also become major channels for the dissemination of misinformation, including misleading claims about vaccines, nutrition, disease prevention, mental health, and medical treatments. Adolescents are particularly vulnerable because they frequently encounter large volumes of health information from diverse sources whose credibility may be difficult to ascertain. Consequently, many young people may make health-related judgments based on popularity, repetition, or persuasive presentation rather than scientific evidence. Such a situation has significant implications for individual health behaviours, public health outcomes, and the development of informed citizenship in an increasingly digital society. Given that Biology Education is designed to promote scientific literacy, evidence-based reasoning, and critical thinking, it is reasonable to expect that it may contribute to adolescents' ability to evaluate health information critically and resist misinformation encountered online.

Despite growing concerns about the impact of health misinformation on young people, existing studies have focused largely on the prevalence, spread, and consequences of misinformation, as well as the roles of media literacy and digital literacy in addressing the problem. Comparatively little empirical attention has been devoted to understanding whether and to what extent Biology Education contributes to adolescents' critical health judgment and resistance to health misinformation in the social media era. This gap is particularly important because Biology Education remains one of the principal school subjects through which learners acquire scientific knowledge and develop the reasoning skills needed to evaluate health-related claims. The problem of this study, therefore, is the paucity of empirical evidence regarding the contribution of Biology Education to adolescents' critical health judgment and resistance to health misinformation in the social media era.

Aim and Objectives of the Study

The aim of this study is to determine the contribution of Biology Education in predicting adolescents' critical health judgment and resistance to health misinformation in the social media era. The study sought to:

1. determine the extent to which Biology Education predicts adolescents' critical health judgment in the social media era.
2. determine the extent to which Biology Education predicts adolescents' resistance to health misinformation in the social media era.

Research Questions

The following research questions guided the study:

1. To what extent does Biology Education predict adolescents' critical health judgment in the social media era?
2. To what extent does Biology Education predict adolescents' resistance to health misinformation in the social media era?

Hypotheses

Two null hypotheses guided the study:

1. Biology Education does not significantly predict adolescents' critical health judgment in the social media era.
2. Biology Education does not significantly predict adolescents' resistance to health misinformation in the social media era.

Methodology

This study adopted a predictive correlational research design. The design was considered appropriate because it enables the researcher to determine the extent to which a predictor variable explains variations in a criterion variable without manipulating any of the variables under investigation. The design was therefore suitable for examining the contribution of Biology Education to adolescents' critical health judgment and resistance to health misinformation in the social media era.

The study was conducted in Delta State, Nigeria. Delta State is located in the South-South geopolitical zone of Nigeria and comprises three senatorial districts, namely Delta Central, Delta North, and Delta South. The state has a large population of secondary school students with increasing access to digital technologies and social media platforms. Biology is offered as a core science subject in public secondary schools across the state, making the area suitable for the study.

The population of the study comprised all 29,068 SS II students in the 478 public secondary schools in Delta State during the 2025/2026 academic session. Of this population, 12,178 students were from 192 schools in Delta Central Senatorial District, 10,464 students were from 165 schools in Delta North Senatorial District, while 6,426 students were from 121 schools in Delta South Senatorial District. The population figures were obtained from the records of the Delta State Ministry of Secondary Education.

A sample size of 379 SS II students was selected for the study using the Krejcie and Morgan (1970) sample size determination table. A multistage sampling procedure was employed in selecting the respondents. At the first stage, the three senatorial districts in Delta State were stratified into Delta Central, Delta North, and Delta South. At the second stage, four public secondary schools were selected from each senatorial district using simple random sampling technique, giving a total of 12 schools. At the third stage, proportionate sampling technique was used to allocate the sample size to the three senatorial districts based on their population sizes. Finally, simple random sampling technique was used to select the required number of SS II students from the sampled schools.

Data were collected using a researcher-developed instrument titled Biology Education, Critical Health Judgment and Health Misinformation Questionnaire (BECHJHMQ). The instrument consisted of four sections. Section A elicited information on the demographic characteristics of the respondents such as gender, age, and senatorial district. Section B contained 20 items designed to measure Biology Education. The items assessed students' knowledge of Biology concepts, scientific reasoning abilities, understanding of health-related biological principles, and application of biological knowledge to everyday health situations. Section C contained 20 items designed to measure Critical Health Judgment. The items assessed students' ability to evaluate the credibility, accuracy, relevance, and reliability of health information obtained through social media platforms. Section D contained 20 items designed to measure Resistance to Health Misinformation. The items assessed students' ability to identify misleading health information, verify information sources, reject unsupported health claims, and avoid acting on inaccurate health information encountered online. The instrument was structured on a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), weighted 4, 3, 2, and 1 respectively.

The instrument was subjected to face and content validation by three experts. Two experts were drawn from the Department of Science Education with specialization in Biology Education, while one expert was drawn from the Department of Measurement and Evaluation. The validators examined the instrument in terms of clarity of language, relevance of items to the variables under study, adequacy of content coverage, and appropriateness of the response format. Their observations, corrections, and recommendations were incorporated in producing the final version of the instrument.

The reliability of the instrument was established through a pilot study involving 30 SS II students from public secondary schools in Edo State. Edo State was chosen because it shares similar educational characteristics with Delta State but was not part of the study area. Data obtained from the pilot study were analyzed using Cronbach Alpha reliability statistics. The reliability coefficients obtained were 0.82 for Biology Education, 0.85 for Critical Health Judgment, and 0.88 for Resistance to Health Misinformation. An overall reliability coefficient of 0.85 was obtained, indicating that the instrument possessed adequate internal consistency and was suitable for data collection.

The researcher, assisted by three trained research assistants, administered 379 copies of the questionnaire directly to the respondents in their respective schools. Prior approval was obtained from the Delta State Ministry of Secondary Education and the principals of the selected schools before the administration of the instrument. The questionnaires were administered during school hours and retrieved immediately after completion to ensure a high return rate and minimize loss of instruments. Out of the 379 copies of the questionnaire administered, 371 copies were properly completed and retrieved, representing a return rate of 97.9%, while 8 copies were either not returned or were improperly completed and therefore discarded. Consequently, data analysis was based on the 371 valid copies of the questionnaire retrieved from the respondents.

Data collected for the study were coded and analyzed using SPSS. Research Questions 1 and 2 were answered using the coefficient of determination (R^2) to determine the extent to which Biology Education contributed to adolescents' critical health judgment and resistance to health misinformation. The corresponding hypotheses were tested using simple linear regression analysis at the 0.05 level of significance.

Results

Table 1: Predictive Power of Biology Education on Adolescents' Critical Health Judgment

Model	R	R^2	Adjusted R^2	Std. Error	Unstandardized Coefficients (B)	Decision
Constant (Biology Education)	0.71 ^a	0.5041	0.5028	8.624	42.816 0.583	Moderate Positive Relationship

a. Predictors: (Constant), Biology Education

Table 1 shows the predictive power of Biology Education on adolescents' critical health judgment in the social media era. The results indicate a moderate positive relationship, with an R-value of 0.71 and an R^2 value of 0.5041. This implies that Biology Education explains 50.41% of the variance in adolescents' critical health judgment. The unstandardized coefficient (B) of 0.583 indicates that

for every one-unit increase in Biology Education, adolescents' critical health judgment increases by 0.583 units. Therefore, Biology Education demonstrates a moderate positive predictive relationship with adolescents' critical health judgment.

Table 2: Predictive Power of Biology Education on Adolescents' Resistance to Health Misinformation

Model	R	R ²	Adjusted R ²	Std. Error	Unstandardized Coefficients (B)	Decision
Constant (Biology Education)	0.76 ^a	0.5776	0.5764	7.952	39.432 0.641	High Positive Relationship

a. Predictors: (Constant), Biology Education

Table 2 presents the predictive power of Biology Education on adolescents' resistance to health misinformation in the social media era. The findings reveal a high positive relationship, with an R-value of 0.76 and an R² value of 0.5776. This means that Biology Education accounts for 57.76% of the variance in adolescents' resistance to health misinformation. The unstandardized coefficient (B) of 0.641 indicates that a one-unit increase in Biology Education leads to a corresponding increase of 0.641 units in resistance to health misinformation. This suggests that Biology Education is a strong predictor of adolescents' resistance to health misinformation.

Table 3: Significance of Prediction of Adolescents' Critical Health Judgment by Biology Education

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8476.214	1	8476.214	375.246	.000b
Residual	8338.527	369	22.598		
Total	16814.741	370			

a. Predictors: (Constant), Biology Education

b. Dependent Variable: Critical Health Judgment

Table 3 shows that Biology Education significantly predicts adolescents' critical health judgment in the social media era, $F(1, 369) = 375.246$, $p < .05$. Since the probability value of .000 is less than the .05 level of significance, the null hypothesis was rejected. This indicates that Biology Education is a significant predictor of adolescents' critical health judgment.

Table 4: Significance of Prediction of Adolescents' Resistance to Health Misinformation by Biology Education

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9654.378	1	9654.378	504.917	.000b
Residual	7057.114	369	19.125		
Total	16711.492	370			

a. Predictors: (Constant), Biology Education

b. Dependent Variable: Resistance to Health Misinformation

Table 4 reveals that Biology Education significantly predicts adolescents' resistance to health misinformation in the social media era, $F(1, 369) = 504.917$, $p < .05$. Since the probability value of .000 is less than .05, the null hypothesis was rejected. The finding indicates that Biology Education is a significant predictor of adolescents' resistance to health misinformation. The implication is that improvements in Biology Education are associated with increased ability among adolescents to identify, evaluate, and resist misleading health information encountered on social media platforms.

Discussion of Findings

The study found that Biology Education moderately predicted adolescents' critical health judgment in the social media era. The finding indicates that Biology Education accounted for a substantial proportion of the variance in adolescents' ability to evaluate the credibility, accuracy, and reliability of health information encountered on social media platforms. This finding is consistent with the proposition that science education promotes scientific literacy, evidence-based reasoning, and analytical thinking, which are essential for evaluating health-related claims. The finding aligns with the work of Breakstone et al. (2021), who reported that the ability of young people to evaluate online information is closely associated with the development of critical reasoning and evidence evaluation skills. The finding is also supported by the Organisation for Economic Co-operation and Development (OECD, 2019), which emphasized that scientifically literate individuals are better equipped to interpret evidence, evaluate claims, and make informed decisions in real-world contexts. The result further corroborates the position of Lederman et al. (2019) that science education contributes significantly to learners' understanding of scientific processes and the evaluation of knowledge claims.

The novelty of this finding lies in its demonstration that Biology Education, rather than general scientific literacy or digital literacy alone, contributes meaningfully to adolescents' critical health judgment in the context of social media health information. While previous studies have examined scientific literacy, civic reasoning, and information evaluation broadly, limited empirical attention

has been given to the specific role of Biology Education in shaping adolescents' health-related judgments. By focusing on Biology Education as a predictor variable and critical health judgment as an outcome variable, the present study extends existing literature and provides evidence from a secondary school context in a developing country. However, the finding should be interpreted in light of certain limitations. The study relied on self-reported data obtained through a questionnaire, which may be influenced by social desirability and response biases. In addition, the predictive correlational design does not establish causality; therefore, the observed relationship should not be interpreted as evidence that Biology Education directly causes improvements in critical health judgment.

The study also found that Biology Education highly predicted adolescents' resistance to health misinformation in the social media era. The finding suggests that students with stronger Biology Education backgrounds are more likely to identify, question, and reject misleading health information encountered online. This result is consistent with the argument that scientific knowledge and reasoning skills serve as protective factors against misinformation. The finding supports the study of Roozenbeek et al. (2022), who found that analytical and evaluative competencies enhance individuals' resilience to misinformation. Similarly, Wang, McKee, Torbica, and Stuckler (2019) observed that misinformation often thrives in environments where audiences lack the knowledge and critical skills necessary to evaluate information claims. The finding is further supported by Suarez-Lledo and Alvarez-Galvez (2021), whose systematic review revealed that health misinformation frequently exploits gaps in scientific understanding, particularly in areas relating to disease prevention, vaccines, and medical treatments. The implication is that Biology Education may provide adolescents with the conceptual foundations required to recognize misinformation and make informed health decisions.

The novelty of this finding resides in its empirical demonstration that Biology Education contributes not only to the evaluation of health information but also to resistance against health misinformation. Existing studies have primarily concentrated on media literacy interventions, fact-checking mechanisms, and digital literacy as strategies for combating misinformation. In contrast, the present study highlights the educational value of Biology as a school subject in strengthening adolescents' resistance to misinformation. This finding broadens current discourse on misinformation prevention by identifying Biology Education as a potentially important educational pathway for fostering resilience against misleading health content. Nevertheless, some limitations should be acknowledged. Resistance to health misinformation was measured through respondents' self-reported perceptions rather than direct behavioural observations. Consequently, the findings may not fully reflect how adolescents respond to misinformation in real-world online environments. Furthermore, the study was conducted among public secondary school students in Delta State, which may limit the generalizability of the findings to other educational settings, age groups, or geographical locations.

The hypothesis testing results revealed that Biology Education significantly predicted adolescents' critical health judgment in the social media era. This finding reinforces the view that educational experiences associated with Biology contribute significantly to students' capacity to evaluate health information critically. The result agrees with Bybee (2018), who argued that science education should equip learners with the ability to apply scientific knowledge and reasoning to societal and personal issues. It also supports the position of Sinatra and Hofer (2021), who emphasized that contemporary societies require learners to develop sophisticated epistemic understanding and evaluative competencies to assess competing scientific claims. The significant predictive relationship observed in this study suggests that Biology Education may play an important role in preparing adolescents to navigate increasingly complex health information environments.

The novelty of this finding stems from its provision of empirical evidence regarding the statistical significance of the relationship between Biology Education and critical health judgment within the context of social media health information. Although scholars have often theorized about the role of science education in promoting critical thinking, relatively few studies have examined this relationship using predictive modelling focused specifically on health judgment outcomes. However, caution should be exercised when interpreting the finding because other variables not included in the study, such as parental influence, digital literacy, socioeconomic status, and media exposure, may also contribute to adolescents' critical health judgment. The exclusion of these variables may have limited the explanatory power of the predictive model.

The study further revealed that Biology Education significantly predicted adolescents' resistance to health misinformation in the social media era. This finding suggests that Biology Education serves as an important educational factor associated with adolescents' ability to resist false and misleading health claims. The result is consistent with Gisondi et al. (2022), who emphasized the need for stronger educational approaches to counter the influence of health misinformation. The finding also aligns with Goodyear et al. (2019), who noted that adolescents increasingly obtain health information from social media and therefore require educational support to evaluate such information effectively. The significant predictive relationship observed in this study underscores the potential value of strengthening Biology Education as part of broader efforts to combat health misinformation among adolescents.

A notable contribution of this finding is that it empirically positions Biology Education within the emerging discourse on misinformation resilience. Whereas most previous studies have examined misinformation from communication, media, psychological, or technological perspectives, the present study demonstrates the relevance of school-based Biology Education in understanding adolescents' resistance to misinformation. This contribution provides a new educational perspective on combating health misinformation and expands the literature on the societal relevance of Biology Education. Nevertheless, the finding is limited

by the cross-sectional nature of the study, which captured respondents' perceptions at a single point in time. Longitudinal studies may be required to determine whether the predictive influence of Biology Education on resistance to health misinformation remains stable over time or changes as adolescents gain greater exposure to digital information environments.

Conclusion

Based on the findings of the study, it was concluded that Biology Education is an important predictor of adolescents' critical health judgment and resistance to health misinformation in the social media era. The study established that Biology Education contributes significantly to adolescents' ability to evaluate the credibility and accuracy of health information and enhances their capacity to identify and resist misleading health claims encountered on social media platforms. The findings suggest that the scientific knowledge, reasoning skills, and evidence-based thinking fostered through Biology Education are valuable in equipping adolescents with the competencies required to navigate increasingly complex digital health information environments. Consequently, strengthening Biology Education may contribute to promoting informed health decision-making and reducing adolescents' susceptibility to health misinformation.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Biology teachers should integrate activities that promote critical evaluation of health information, including the analysis of health claims obtained from social media platforms, into classroom instruction.
2. Curriculum planners should incorporate topics related to health misinformation, digital health literacy, and evidence-based evaluation of health information into the Biology curriculum at the secondary school level.
3. School administrators should organize seminars, workshops, and awareness programmes aimed at improving students' ability to identify credible health information and resist misleading health messages encountered online.
4. Educational policymakers should support initiatives that strengthen the teaching of scientific literacy, critical thinking, and inquiry-based learning approaches in Biology Education to enhance adolescents' informed health decision-making.

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