

Transforming Abortion Complication Awareness, Knowledge and Behaviours: The Role of Social Studies Education Among Female Undergraduates

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Received: September 1, 2026

Accepted: October 26, 2026

Online Published: October 28, 2026

doi:10.11114/jets.v15i1.9452

URL: <https://doi.org/10.11114/jets.v15i1.9452>

Abstract

This study examined the role of social studies teaching. It combined health education and social studies literacy in shaping knowledge, social behaviour, and the incidence of abortion-related complications among undergraduate female students at Delta State University, Abraka, Nigeria. Using a descriptive survey research design, data were collected from 179 undergraduate female students using the Social Studies Teaching, Knowledge, Behaviour, Abortion Complicated Awareness Questionnaire (SSTKBACAQ); the reliability coefficient was 0.78. Responses were measured on a four-point scale and analysed using means, Pearson Product-Moment Correlation, and mediation path analysis at the 0.05 significance level. Findings showed that combined health education literacy and social studies literacy were significantly associated with reduced abortion-related complications ($r = -.309$, $p < .001$). Social studies teaching was significantly positively associated with students' knowledge of abortion complications ($r = .201$, $p < .01$) and with social behaviour orientations toward abortion ($r = .920$, $p < .001$). Path analysis revealed that social studies teaching exerts its protective influence on complication outcomes through two mediating pathways: complication knowledge ($a_1 = .201$) and social behaviour ($a_2 = .920$), with a significant direct combined path ($c' = -.309$, $p < .001$). The study concludes that social studies teaching is a primary institutional lever for both knowledge-building and behavioural socialisation regarding abortion and that integrated health education and social studies programmes are more effective than either discipline in isolation. We strongly recommend strengthening social studies pedagogy with reproductive health content and establishing multidisciplinary campus reproductive health platforms.

Keywords: abortion complications, awareness, knowledge, behaviours, social studies education, female undergraduates

1. Introduction

The relationship between education and reproductive health (RH) outcomes has been a longstanding focus of public health research. In Nigerian tertiary institutions, where abortion and its complications remain a significant health burden, the roles of formal education, particularly health education and social studies, have been studied primarily in isolation. Health education literacy research has documented its benefits for reproductive knowledge and, under comprehensive conditions,

for behavioural change (Salam et al., 2016; Guo et al., 2025; Tom et al., 2025). Social studies, as a discipline concerned with values, societal norms, and human development, provides a parallel but distinct channel through which students come to understand their social world, including the sociocultural dimensions of reproduction, stigma, and abortion (Obro, 2021; Saka, 2021; Uwaifo & Omiyefa, 2024; Akpomimie et al., 2026). Osalusi and Agayi (2021) argued that strong values form the foundation for making right decisions because they are entrenched in people's culture. Therefore, engaging in sexual activities before marriage and outside marriage is deemed immoral, and involvement in abortion is sacrilegious and unacceptable in traditional and religious societies, resulting in a public health crisis (Ghodrati, 2026).

Complications from abortions are a significant issue in reproductive health, especially when abortions take place in unsafe environments. The World Health Organisation (WHO, 2024) defines unsafe abortion as a "preventable cause of maternal morbidity and mortality" that is influenced by access to quality health care, information and services at the right time. It's therefore important to raise awareness and knowledge of the different complications which can occur after abortion so that undergraduates can make decisions based on their reproductive health and recognise when they need urgent medical intervention. To support this understanding, health literacy is useful, as it focuses on access to, comprehension of, appraisal of, and utilisation of health information for decision-making (Sørensen et al., 2012).

However, awareness and knowledge explain only part of the variation in reproductive health behaviours; social norms, cultural values, beliefs, peer influences, and perceptions of responsibility also influence reproductive health behaviours. Raising questions and engaging in critical thinking about social issues, human rights, citizenship, ethical decision-making, and personal and collective responsibility can create a space in which these influences can be explored in the learning of social studies. Values-based pedagogy enables students to critically analyse reproductive health information, reflect on different views and the social and ethical ramifications of health choices. This approach blends fact-based learning with critical thinking, value clarification, and responsible decision-making in traditional health education.

Hence, Social Studies education within reproductive health education could be a useful reference to improve awareness and understanding of female undergraduate students of the complications encountered with abortion and the links between the knowledge of the female students and their health-related behaviours. While health literacy involves the skills needed to understand and use health information, values-based Social Studies pedagogy focuses on the social, ethical, and civic aspects of decision-making. The study on the contribution of Social Studies education to awareness, knowledge and behaviours towards abortion complications among female undergraduates helps to understand educational approaches that could be adopted to inform female undergraduates on reproductive health, among others.

However, neither discipline has been examined as a combined educational literacy construct against complication outcomes, nor has the specific mediating pathway from social studies teaching through knowledge and behaviour to complication experience been modelled in the Nigerian university context. This study addresses these gaps by testing three hypotheses: (H1) whether combined health education and social studies literacy significantly reduce the incidence of complications; (H2) whether social studies teaching is significantly associated with knowledge of complications; and (H3) whether social studies teaching is significantly associated with pro-social behaviour regarding abortion. The study's theoretical innovation lies in its mediation framework, which positions knowledge (H2) and social behaviour (H3) as mediating variables through which social studies teaching influences abortion-related outcomes (H1).

2. Literature Review

2.1 Social Studies Education and Reproductive Health

Social studies education, by its nature, focuses on the individual's holistic development and their interaction with society. Uwaifo and Omiyefa (2024) argued that values, a central concern of social studies, reflect people's culture by emphasising ideas, concepts, behaviours, and attitudes society deems acceptable. This includes views on chastity, moral responsibility, and social consequences of reproductive behaviour. Sexuality education, which is embedded within social studies in many West African secondary and tertiary curricula, exposes students to sexual safety and reproductive responsibility. Social studies thus serve as a formal vehicle for transmitting institutional values regarding reproductive health. The goal of sex education was to provide students with the knowledge, abilities, and mindset they needed to make wise choices regarding their relationships and sexual health. Cadmus and Owoaje (2011), in a study done at the University of Ibadan, examined undergraduates' knowledge of abortion and its complications. The study included 42 students; the cross-sectional design used questionnaires and interviews to collect data, which were analysed using SPSS 14. The study established that undergraduates of UI had 83.3% knowledge of abortion and its complications. Some of the complications include death, inability to have children, and bleeding.

Winter et al. (2016), analysing survey data from 443 MSW students, found that students' behaviour was strongly linked to their moral and ethical beliefs about reproductive health, beliefs shaped significantly by their African culture and religious beliefs. Håkansson et al. (2020), studying abortion and contraceptive use in Western Kenya, reported that 28 respondents affirmed that girls who have had an abortion are sinning, while 19 concluded that females seeking an abortion

bring shame to the community, and 18 respondents see them as a bad influence on females. This demonstrated that social norms and labelling of women as immoral for seeking abortions shape behavioural responses. Furthermore, Zenebe and Haaland (2025) investigated how knowledge and stigmatisation influence the decision of Ethiopian university students on abortion. 30 students and 13 stakeholders were interviewed, along with 2 focus group discussions. The study demonstrates that abortion and premarital pregnancy are still stigmatised and frequently seen as taboo. This, to a large extent, determines whether Ethiopian university female students seek formal care after abortion complications or not. This finding corroborates Khofi's (2025) study, which revealed that deeply ingrained facility-based stigma, a lack of institutional support, and conflicting personal or religious values among staff heavily contribute to medical barriers. These moral standoffs delay critical interventions, driving women toward "back-street" operators and dramatically escalating maternal morbidity and mortality from severe haemorrhage or uterine perforation.

Combining social studies literacy, critical comprehension of social structures, human rights, and institutional safety nets, with health education literacy, the capacity to obtain, process, and understand basic health information, yields a synergistic protective effect. Dual-literate undergraduate female students are much better able to identify early warning indicators of difficulties, comprehend the systemic hazards associated with non-sterile procedures, and choose safe, legal medical channels over covert ones. Combined literacies dramatically lower severe morbidity by reducing risky procedures and speeding early healthcare-seeking during reproductive crises, according to studies mapping reproductive health equity (Lucero-Prisno III et al., 2024; Mukkamala, 2024; Anokwuru, 2026).

2.2 Combined Educational Literacy and Complication Prevention

The concept of combined educational literacy integrating health education and social studies approaches recognises that reproductive health behaviour is simultaneously a health, moral, and social phenomenon. Health education literacy provides the technical knowledge and skills dimension, while social studies provide the values and behavioural orientation dimension. Studies from diverse contexts demonstrate that multi-component educational interventions consistently outperform single-component approaches in reproductive health outcomes (Salam et al., 2016; Alekhya et al., 2023). Erumi (2022) argued that when health education and social studies teaching address reproductive health holistically, their complementarity creates synergistic effects on student knowledge and behavioural dispositions.

Recent research shows that social studies education helps female undergraduates move from basic anatomical knowledge to structural understanding by situating medical phenomena within a socio-political framework (Li, 2026). Students' ability to accurately identify crucial abortion-related consequences (such as sepsis, haemorrhage, and incomplete termination) is positively correlated with educational interventions that use problem-based learning within social science modules. Structured classroom exposures remove cognitive biases, dispel enduring cultural beliefs, and provide factual information about the psychological and physical costs of risky reproductive methods instead of relying on peer-group disinformation.

Peer stigma frequently isolates female students who are experiencing post-abortion distress in many college settings, which seriously delays emergency clinical care. Recent research shows that progressive social studies education significantly reduces ostracism and punitive social attitudes by emphasising gender equity, human rights, and collective social responsibility. Instructional exposure builds supportive peer networks, reduces psychological barriers to disclosure, and promotes a proactive social posture that supports timely medical referrals and mutual care by framing reproductive complications as public health and social justice issues rather than personal moral failings, as Meenaa et al. (2026) affirm, noting that these conflicting values cause intense moral pain, self-condemnation, and psychological trauma, highlighting an urgent need for values-sensitive post-abortion counselling.

2.3 Knowledge and Social Behaviour as Mediating Pathways

Contemporary reproductive health education emphasises that educational inputs translate into health outcomes through two primary mediating channels: cognitive change (knowledge and awareness) and behavioural change (social norms, attitudes, and practices). The Knowledge-Attitudes-Practices (KAP) framework, widely applied in reproductive health research, establishes that knowledge is a necessary, though not sufficient, precondition for behavioural change, which in turn precedes changes in health outcomes (WHO, 2024). Affirming this, the study of Ibrahim et al. (2025) in Osun State established that 90% of undergraduate female students had adequate knowledge of complications arising from unsafe abortion; also, 13.2% have actually partaken in abortion, while 60.4% have a negative attitude towards unsafe abortion, thereby running the risk of being exposed to complications. A slightly different finding emerged in Oyo State, Nigeria, as established by Bobo et al. (2025) with a sample size of 380 students; 42.4% knew about safe abortion, meaning 57.6% did not have the knowledge needed to avoid complications as a result of abortion. When students are exposed to societal values and norms, there are certain attitudes/behaviours they are expected to display when it comes to abortion-related issues. In the study by Petrus and Kadhila (2023) in Namibia, using a quantitative survey design, 73 300-level nursing students were investigated. The study revealed that 40% of respondents agreed that unmarried ladies practise unsafe

abortion, while 21% of the students are of the view that women should be provided with the option of having an abortion in the case of unwanted pregnancy.

Female undergraduates who exhibit prosocial, health-seeking behaviours and high complication literacy steer clear of risky covert activities, choose safe treatment pathways, and respond quickly to secondary symptoms. As a result, social behaviour and knowledge serve as complete or strong partial mediators, translating the curriculum's structural influence into reduced avoidable reproductive health issues (Akanke et al., 2024; Slam et al., 2024; Mukkamala, 2024). In this study, social studies teaching is hypothesised to influence complication outcomes by first building complication knowledge (H2 mediation pathway) and shaping social behaviour orientations (H3 mediation pathway), which together reduce the likelihood of unsafe abortion-seeking behaviour. This two-mediator model is represented in the path diagram presented in Figure 2.

2.4 Conceptual Framework

Figure 1 presents the study's conceptual framework. Social studies teaching functions as the central independent variable, with combined health education literacy contributing jointly (H1). Knowledge of complications and social behaviour serve as mediating variables (H2, H3) through which social studies teaching influences abortion-related complication outcomes.

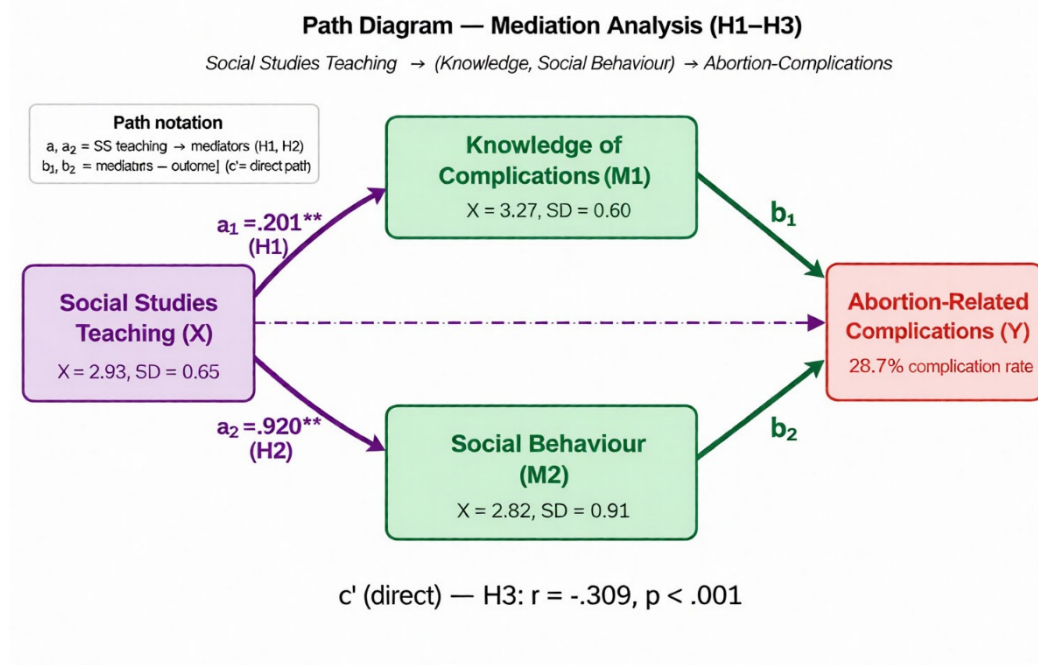


Figure 1. Conceptual Framework for the Study (Hypotheses 1–3)

Figure 2 presents the full path diagram, showing the specific mediating paths (a_1, a_2) from social studies teaching to knowledge of complications (M1) and social behaviour (M2), the paths from mediators to complications (b_1, b_2), and the direct combined literacy path (c').

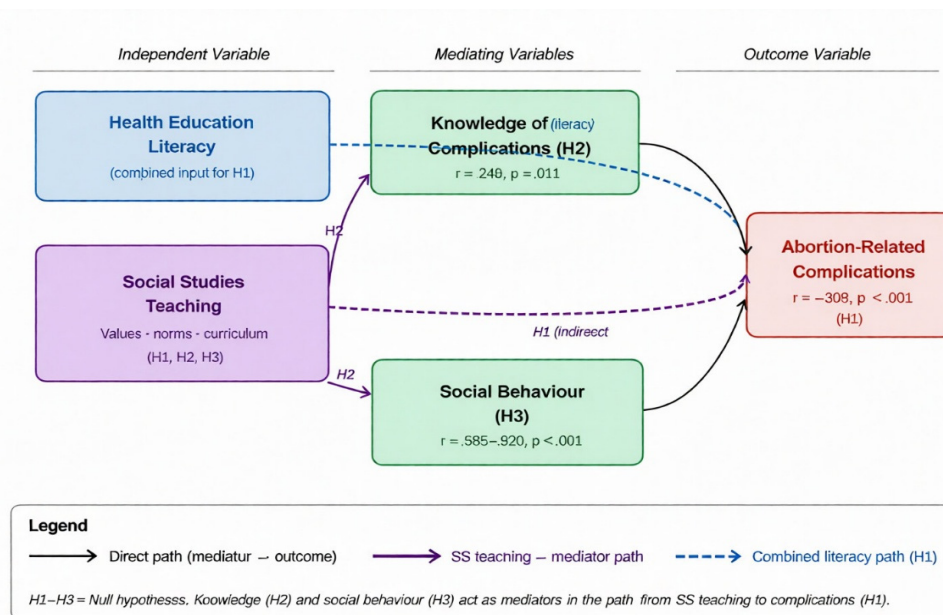


Figure 2. Path Diagram - Mediation of Social Studies Teaching on Complications via Knowledge and Social Behaviour

3. Methodology

3.1 Participants and Sampling

The study adopted a descriptive survey research design to examine abortion complication awareness, knowledge, and behaviours among female undergraduates and the role of Social Studies education. The study was conducted at Delta State University, Abraka, Nigeria. This design was appropriate because it allowed the researcher to collect data from a large population to describe existing conditions, opinions, and attitudes without manipulating variables. The study was conducted at Delta State University, Abraka, a multi-campus state university in Delta State, Nigeria.

3.2 Participants and Sampling

The study's target population comprised all undergraduate and postgraduate students/staff across the institution's relevant faculties. A multi-stage sampling technique was employed to select 179 undergraduate female students from a target population of 400, employing cluster sampling for departments, proportionate stratification by study level, and simple random sampling for final selection. A multistage sampling procedure was used to select participants from the target population. The sampling process involved selecting undergraduates from four levels, as well as master's and doctoral students. The selected participants were female undergraduate students who met the study's eligibility criteria. The final analytic sample comprised participants who met the predefined eligibility criteria and provided data suitable for analysis. Eligible participants were female Social Studies undergraduates enrolled in the selected programme during the study period and provided informed consent.

3.3 Instrumentation and Data Collection

The researchers developed the Social Studies Teaching, Knowledge, Behaviour, and Abortion Complicated Awareness Questionnaire (SSTKBACAQ) as a four-point Likert scale questionnaire (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1). Face and content validity were established through expert review, and a test-retest reliability coefficient of 0.78 was obtained.

The Combined Educational Literacy Index (CELI) was developed to provide a composite measure of participants' educational literacy based on the relevant study variables. The index was computed by combining scores from Social Studies Teaching, knowledge, behaviour, and awareness of abortion complications. Participants' responses were scored for each component according to the predetermined scoring criteria. The component scores were then converted to a common scale before aggregation to ensure that the components contributed appropriately to the composite measure.

For this study, three composite scores were derived: (1) the Social Studies Teaching Score (composite of items on values education, curriculum, societal norms, and behaviour; H1, H2, H3); (2) the Complication Knowledge Score (items on awareness of bleeding, death, infertility, and open discussion; H2); and (3) the Social Behaviour Score (items on chastity, moral education, societal norms, and rights; H3).

For transparency and reproducibility, the study specifies the individual components, scoring ranges, weighting procedures, treatment of missing responses, and any thresholds used to categorise participants' scores. The index was interpreted in accordance with the operational definitions established for the study.

3.4 Data Analysis

The Combined Educational Literacy Index was derived as the unweighted mean of the Health Literacy Score, Health Education Role Score, and Social Studies Score (H1). We used Pearson product-moment correlation for all inferential analyses at the 0.05 significance level. Participants were excluded from the final analysis if they were ineligible, submitted duplicate responses, or provided questionnaires with substantial missing data that prevented the computation of the relevant study measures. Questionnaires with partial missing data were handled according to the study's predetermined data-management procedures. Responses were not excluded solely because they were incomplete unless the missing information prevented the calculation of the relevant variables or the participant failed to meet the specified analytic requirements. Of the two hundred questionnaires distributed, 179 were returned. After screening for eligibility, completeness, and data quality, twenty-one questionnaires were excluded for completeness and data quality. Consequently, 179 questionnaires were retained for analysis, representing 89.5% of the returned questionnaires. The final analytic sample was used for the descriptive statistical analyses reported in the study. The path coefficients in the mediation diagram represent Pearson r values between constructs, interpreted using Baron and Kenny's (1986) mediation framework.

4. Results

Descriptive Statistics of Key Constructs

Table 1 presents the mean scores and standard deviations for the key constructs in this study.

Table 1. Descriptive Statistics for Key Constructs (N = 179)

Construct	N	Mean	SD	Decision (criterion = 2.50)	Hypothesis
Social Studies Teaching Score	179	2.93	0.65	Above criterion	H1, H2, H3
Complication Knowledge Score	179	3.15	0.75	Above criterion	H2
Social Behaviour Score	179	2.82	0.91	Above criterion	H3
Combined Educational Literacy Index	179	2.83	0.61	Above criterion	H1
Health Education Role Score	179	3.05	0.84	Above criterion	H1

Note. All composite scores are unweighted averages of subscale items. Criterion mean = 2.50.

All five constructs exceeded the criterion mean of 2.50. The Complication Knowledge Score was highest ($\bar{x} = 3.15$, $SD = 0.75$), followed by the Health Education Role Score ($\bar{x} = 3.05$, $SD = 0.84$) and the Social Studies Teaching Score ($\bar{x} = 2.93$, $SD = 0.65$). The Combined Educational Literacy Index ($\bar{x} = 2.83$, $SD = 0.61$) and Social Behaviour Score ($\bar{x} = 2.82$, $SD = 0.91$) also comfortably exceeded the criterion.

Social Studies Teaching and Complication Knowledge (H2)

Table 2 presents item-level analysis of social studies teaching items and complication knowledge items relevant to H2.

Table 2. Mean Scores for Social Studies Teaching and Complication Knowledge Items (H2)

S/N	Item Statement	N	Mean	SD	Decision (criterion = 2.50)
A. Social Studies Teaching Items					
1	I have received education on moral values regarding abortion	179	2.89	0.97	Above criterion
2	I have received counselling/support on RH in my institution	179	2.63	1.06	Above criterion
3	The curriculum in my discipline addresses abortion complications.	179	2.84	1.02	Above criterion
4	Discussing abortion openly can help reduce complications	179	2.82	1.07	Above criterion
5	Students should be supported in accessing safe SRH services	179	3.11	0.98	Above criterion
6	Tertiary students are at higher risk of unsafe abortions.	179	2.96	1.06	Above criterion
B. Complication Knowledge Items					
7	Bleeding, infertility, and emotional distress are complications of abortion.	179	2.94	0.80	Above criterion
8	Death is a complication that may occur after an abortion.	179	2.88	0.32	Above criterion
9	I can recognise symptoms of complications after an abortion.	179	2.34	1.01	Below criterion
10	I am aware of the legal status of abortion in my country.	179	2.55	1.02	Above criterion

Note. Criterion mean = 2.50. Item 9 (symptom recognition) fell below the criterion, indicating a knowledge gap despite an overall above-criterion composite.

Social studies teaching items were broadly above criterion, indicating that students affirmed exposure to values education, curriculum engagement with abortion, and support for open discussion and service access. Within complication

knowledge items, students acknowledged major complications (bleeding, infertility, death) but showed a gap in practical symptom recognition ($\bar{x} = 2.34$, below criterion).

Social Studies Teaching and Social Behaviour (H3)

Table 3 presents item-level analysis of social behaviour items relevant to H3.

Table 3. Mean Scores for Social Behaviour Items (H3)

S/N	Item Statement	N	Mean	SD	Decision (criterion = 2.50)
1	Chastity is a recommended value; I prefer staying away from sex	179	2.80	0.98	Above criterion
2	I have received education on moral values regarding abortion, so I play it safe.	179	2.89	0.97	Above criterion
3	Society frowns at abortion; it should be discouraged	179	2.62	1.15	Above criterion
4	Every woman has the right to make decisions about her pregnancy.	179	2.89	0.32	Above criterion
5	I have engaged in abortion, and I have regrets.	179	2.04	1.05	Below criterion
6	Discussing abortion openly helps reduce complications	179	2.82	1.07	Above criterion
7	Fidelity should be encouraged in the family	179	2.82	1.07	Above criterion
8	Social Behaviour Composite Score	179	2.89	0.91	Above criterion

Note. Criterion mean = 2.50. Item 5 (personal abortion regrets) was below criterion, consistent with low self-reported abortion prevalence among this specific cohort.

Hypothesis Testing

Summary of Hypothesis Test Results

Table 4 presents the Pearson correlation results for H1–H3.

Table 4. Summary of Hypothesis Testing Results (H1–H3)

Hypothesis	Variables Correlated	R	p-value	Decision
H01: Combined HE and SS literacy will not significantly reduce complication incidence.	Combined literacy index × complication experience	-.309	p < .001	Rejected
H02: No significant relationship between SS teaching and knowledge of complications.	SS teaching score × complication knowledge score	.201	p < .01	Rejected
H03: No significant relationship between SS teaching and social behaviour toward abortion.	SS teaching score × social behaviour score	.920	p < .001	Rejected

Note. All tests two-tailed, $\alpha = .05$. Pearson r reported. SS = Social Studies; HE = Health Education.

Hypothesis 1: Combined Educational Literacy and Complication Reduction

H01 states: Health education literacy and social studies literacy will not significantly reduce the incidence of abortion-related complications among undergraduate female students. A Pearson correlation between the Combined Educational Literacy Index and complication experience yielded $r = -.309$, $p < .001$ ($n = 179$). Since $p < .05$, the null hypothesis was rejected. A significant negative association was found, indicating that higher combined educational literacy scores were associated with a lower likelihood of abortion-related complication experience. The social studies teaching subscale independently contributed $r = -.191$, $p = .023$ to this relationship. Both the combined literacy index and the social studies component individually demonstrated statistically significant inverse relationships with complications.

Hypothesis 2: Social Studies Teaching and Knowledge of Complications

H02 states: There is no significant relationship between social studies teaching and knowledge of abortion-related complications. The Pearson correlation between the Social Studies teaching score and the complication knowledge score ($n = 179$) yielded $r = .201$, $p < .01$. Since $p < .05$, the null hypothesis was rejected. A statistically significant positive correlation was found, indicating that students reporting higher exposure to social studies teaching demonstrated greater knowledge of abortion-related complications. This represents the a_1 path in the mediation model.

Hypothesis 3: Social Studies Teaching and Social Behaviour

H03 states: There is no significant relationship between social studies teaching and social behaviour toward abortion-related complications. The Pearson correlation between the Social Studies Teaching Score and the Social Behaviour Score ($n = 179$) yielded $r = .920$, $p < .001$. The null hypothesis was rejected. This near-perfect positive correlation indicates an exceptionally strong relationship between social studies teaching and pro-social behavioural orientations regarding abortion. The broader Social Studies Composite with Social Behaviour yielded $r = .855$, $p < .001$. This represents the a_2 path in the mediation model.

Mediation Path Analysis

The path diagram in Figure 2 operationalises the mediation model. Social studies teaching predicts complication knowledge ($a_1 = .201$, $p < .01$; H₂) and social behaviour ($a_2 = .920$, $p < .001$; H₃). Both mediators in turn contribute to the outcome construct of abortion-related complications, with the combined educational literacy path yielding $c' = -.309$, $p < .001$ (H₁). Following Baron and Kenny's (1986) criteria, the significant a_1 , a_2 , and c' paths indicate that social studies teaching's influence on complication outcomes operates substantially through both the cognitive (knowledge) and behavioural (social norms) pathways. The relative magnitude of a_2 (.920) versus a_1 (.201) indicates that the social behaviour pathway is the dominant mediation channel, confirming that social studies teaching influences outcomes primarily through the behavioural-values mechanism rather than through knowledge transmission alone.

4.1 Discussion

4.1.1 Combined Educational Literacy and Complication Prevention (H₁)

The rejection of H₀₁ ($r = -.309$, $p < .001$) confirms that combined health education and social studies literacy is significantly inversely associated with abortion-related complication experience. This finding builds on the study's earlier finding that general health literacy alone was insufficient by showing that a multi-dimensional literacy index including both health and social studies components is significant. This aligns with Salam et al. (2016), who showed that multi-component SRH education interventions consistently outperform single-component approaches, and with Erumi's (2022) theoretical argument that health education and social studies complement each other to create synergistic effects. The social studies subscale's significant independent contribution to complication reduction ($r = -.191$, $p = .023$) underscores that social studies education is not a peripheral addition but a statistically meaningful co-determinant of health outcomes.

4.1.2 Social Studies Teaching and Knowledge of Complications (H₂)

The significant positive relationship between social studies teaching and knowledge of abortion complications ($r = .201$, $p < .01$) confirms that social studies education enhances students' cognitive understanding of what constitutes an abortion complication. Social studies' emphasis on societal values, human rights, and reproductive responsibility scaffolds students' engagement with health topics in contextually meaningful ways, rather than as abstract clinical facts. This aligns with Uwaifo and Omiyefa's (2024) position that social studies education shapes students' understanding of social norms, including those related to reproductive behaviour. The finding also aligns with Winter et al. (2016), who linked educational background to reproductive health knowledge and decision-making orientations. Notably, the near-perfect correlation ($a_2 = .920$) for social behaviour exceeds the knowledge path ($a_1 = .201$), indicating that social studies teaching works primarily through behavioural socialisation rather than knowledge transmission — a distinction with important pedagogical implications.

4.1.3 Social Studies Teaching and Social Behaviour (H₃)

The extraordinarily strong positive correlation between social studies teaching and social behaviour ($r = .920$, $p < .001$) is the study's most compelling finding. It indicates that students who report higher exposure to social studies teaching exhibit substantially stronger pro-social behavioural dispositions, including support for chastity, moral values, and societal disapproval of unsafe abortion, as well as recognition of women's reproductive rights. This finding aligns with Cadmus and Owoaje (2011) and Håkansson et al. (2020), who showed that social and moral education strongly shapes behavioural responses to abortion in Ibadan and Western Kenya, and with the broader literature on values education. The dominant a_2 path in the mediation model indicates that social studies teaching's primary mechanism of influence on complication outcomes is behavioural socialization, not knowledge transmission alone. This has significant implications for social studies pedagogy: the discipline's unique contribution lies in its capacity to shape values and behavioural norms, which in turn create protective orientations against unsafe abortion.

4.1.4 Mediation and Combined Pathways

The path diagram (Figure 2) makes explicit the theoretical mechanism by which social studies teaching reduces abortion-related complications. Students who receive stronger social studies teaching (X) develop both greater knowledge of complications (M1, $a_1 = .201$) and stronger pro-social behavioural orientations (M2, $a_2 = .920$). These mediating variables then contribute to reduced complication incidence through the combined literacy pathway ($c' = -.309$). The dominance of the behavioural pathway ($a_2 \rightarrow a_1$) suggests that social studies teaching's contribution to reproductive health outcomes is primarily behavioural-normative rather than cognitive-informational. This finding supports integrated approaches that use social studies not merely to deliver information but to build values and shape behaviour. It also reinforces calls by Bell et al. (2020) and WHO (2024) for reproductive health programs that address knowledge and behavioural/social-norm dimensions simultaneously.

5. Conclusion

This study examined the relationship between social studies teaching, combined with educational literacy, knowledge of complications, and social behaviour toward abortion-related complications among 179 undergraduate female students at Delta State University, Abraka. All three null hypotheses were rejected. Combined educational literacy was significantly and inversely associated with experience with complications. Social studies teaching was significantly and positively associated with both knowledge of complications and social behaviour. Path analysis confirmed that social studies teaching operates through two mediating channels, cognitive knowledge (a_1) and behavioural socialisation (a_2), with the behavioural pathway dominant. These findings establish social studies as a critical institutional lever for reproductive health protection in the Nigerian tertiary context. Future research should employ structural equation modelling (SEM) with larger, multi-site samples to rigorously test the full mediation model, quantify indirect effects, and compare path coefficients across socio-demographic subgroups.

Based on the study's findings, it was suggested that tertiary-level Social Studies curricula explicitly integrate modules on reproductive health, rights-based approaches to sexuality, and the sociocultural determinants of abortion complications to capitalise on the strong relationship between social studies teaching and both knowledge and behavioural outcomes. Health education and Social Studies should be delivered as a coordinated, integrated programme rather than in disciplinary silos, given the demonstrated superiority of combined literacy over single-discipline approaches. Social Studies pedagogy should be intentionally designed to leverage its values-formation strength, the dominant behavioural mechanism identified, by incorporating case discussions, role modelling, and values clarification exercises that directly address abortion-related social norms. Given the mediation model's dominance of the behavioural pathway, campus-based reproductive health awareness campaigns should explicitly engage social norms and behavioural dimensions rather than focusing solely on knowledge transmission.

6. Limitation

This study investigated the use of social studies in transforming the behaviour of students towards abortion complication awareness. All students in this study are Social Studies Education students at Delta State University. When interpreting the results of this study, it is important to consider several limitations. First, only female undergraduates majoring in Social Studies Education were included in the sample. The exclusive focus on students within the field may have introduced selection bias, even if this cohort was pertinent to investigating the possible effect of Social Studies education on abortion complication awareness, knowledge, and health-related behaviours. Compared with students from other academic fields, these students may have more positive views of the relevance of social studies education to reproductive health education because they are more familiar with its goals, values, and pedagogical principles. Their replies may be influenced by this disciplinary exposure, leading them to exaggerate the perceived importance of social studies education on knowledge, behaviour, and awareness of abortion complications.

Second, the single-discipline sample limits the findings' applicability to female undergraduates in other fields, whose educational backgrounds, exposure to reproductive health information, and views on the role of social studies may vary. Therefore, rather than reflecting the broader undergraduate population, the results should be interpreted primarily in the context of female Social Studies Education undergraduates. To facilitate comparative analysis and determine whether the observed patterns are unique to Social Studies Education majors or also appear among students from different educational backgrounds, future research should include students from a variety of academic disciplines and institutions.

Additionally, if the study used a descriptive survey design, the results show trends in participants' claimed awareness, knowledge, attitudes, and behaviours, but they cannot, on their own, prove that social studies instruction changed these outcomes. The observed patterns may also be caused by other factors, such as access to health information, cultural attitudes, family and peer pressures, and earlier reproductive health education. Given the delicate nature of abortion-related topics, it is important to recognise the potential for recall errors and socially acceptable answers when data were gathered through self-report questionnaires.

Notwithstanding these drawbacks, the study offers insightful information about the awareness, knowledge, and behaviours of female students in social studies education regarding abortion complications. To better examine the potential contribution of social studies education to reproductive health literacy and informed decision-making, the findings provide a foundation for future research using more diverse student populations, comparative designs, and longitudinal or intervention-based approaches.

7. Implication

Abortion related complications are issues very often connected with health education and clinical studies, and not social studies. All the same, social studies is an all-embracing discipline, making citizens well informed in all areas, including abortion awareness. Exposing the students to the knowledge and behaviour of abortion related complications becomes very imperative. This will enable the students to behave appropriately toward sex and abortion as active member of the society.

It is also pivotal to note at this juncture that social studies education positively influences students' cognitive understanding of what abortion complications entail and the position to adopt as knowledgeable students. Furthermore, worthy of note is that the exposure of social studies teaching on complications inherent in the incidence of abortion has enhanced their behavioural disposition in favour of societal values such as moral values, rejection of unsafe abortion, chastity, and fidelity in the family.

Acknowledgments

Delta State University, the Department of Social Science Education, and research assistants who contributed to the study's data deserve our deepest gratitude for their support of this research.

Author contributions

All authors made equal contributions to the research, encompassing the study design, data gathering, data analysis, interpretation of results, and paper writing and revision. All contributors reviewed and sanctioned the final document.

Funding

No funding received.

Competing interests

There is no conflict of interest.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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