




Contraceptive Choices and Attachment Voices: A Study at the University of Limpopo

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Abstract:

Introduction: This study examined the relationship between attachment styles and contraceptive intent among female University of Limpopo students in Polokwane, South Africa. The primary hypotheses proposed positive associations between secure attachment and high contraceptive intent, as well as varying relationships for avoidant and anxious attachment styles.

Methods: A cross-sectional correlational survey design was utilized to examine the association between attachment styles and contraceptive intent among female university students. A total of 207 students were approached, of whom 180 met eligibility criteria, provided consent, and completed the questionnaire (response rate = 87%). Multinomial logistic regression assessed relationships between attachment styles (secure, avoidant, anxious) and three levels of contraceptive intent (low, moderate, high).

Results: Among 180 participants (mean age = 21.4 ± 2.3 years), 41.1% reported secure, 31.7% anxious, and 27.2% avoidant attachment. Contraceptive intent was high in 35.6%, moderate in 39.4%, and low in 25%. Multinomial logistic regression showed that anxious attachment positively predicted high contraceptive intent ($B = 0.913$, $p = 0.042$), while avoidant attachment predicted low intent ($B = -0.756$, $p = 0.038$). Pseudo R^2 values (Cox & Snell = $R^2 0.023$; Nagelkerke = $R^2 0.116$) indicated weak explanatory power. These findings suggest that while attachment styles shape emotional dynamics surrounding contraceptive decision-making, contextual and relational factors exert stronger influence, highlighting the need for integrated psychosocial interventions in student sexual-health programmes.

Discussion: Although the overall model was not statistically significant, distinct patterns emerged: anxious attachment was linked to high contraceptive intent, while avoidant attachment predicted lower intent. These findings suggest that attachment insecurity may shape reproductive decision-making. However, broader psychological and contextual factors likely play a more influential role than attachment style alone.

Conclusion: Attachment styles may not be strong predictors of contraceptive behaviour among this population. The study highlights the complexity of reproductive decision-making and the need for further research that includes additional psychological and contextual variables. Future studies should explore diverse populations to better understand the nuanced factors influencing contraceptive intent.

Keywords: Attachment styles, Contraceptive intent, Female university students, South Africa, Contextual factors, Psychological.

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1. INTRODUCTION

Contraceptive use among women has long been a critical topic in public health, psychology, and sociology, with much of the global discourse focused on medical, economic, and socio-cultural dimensions. Despite extensive research into these external factors, less attention has been paid to the psychological influences on women's reproductive behaviours, particularly attachment theory. This theory suggests that early life experiences with caregivers' shape individuals' internal working models of relationships, which in turn affect emotional regulation, interpersonal functioning, and health behaviours throughout life [1-3]. Understanding how attachment styles influence contraceptive intent may provide novel insights into the motivations and barriers behind contraceptive behaviour in young women.

Reproductive decision-making does not occur in isolation but is shaped by a dynamic interplay of individual, relational, and environmental influences. While economic barriers, inadequate sex education, and cultural taboos have all been shown to affect contraceptive uptake, psychological factors, especially those embedded in relationship dynamics, are increasingly recognized as pivotal [4, 5]. For university students, these decisions may be even more complex. Emerging adulthood is a life stage characterized by identity exploration, fluctuating romantic involvement, and evolving autonomy [1], making it a particularly relevant context for exploring the role of attachment in sexual and reproductive health.

At the University of Limpopo (UL), contraceptive use among female students occurs within a matrix of socio-cultural, economic, and psychological influences. Despite increased access to sexual health education and services, unintended pregnancies persist, with many students reporting inconsistent or incorrect use of contraception [6]. This discrepancy between knowledge and behaviour suggests that informational campaigns alone may be insufficient. Traditional public health frameworks have primarily addressed logistical and systemic barriers, such as cost, availability, and access, but there is growing recognition that deeper psychological processes may underpin behavioural inconsistencies [7].

Attachment styles namely: secure, anxious, avoidant, and fearful-avoidant, are defined by distinct emotional and relational patterns that originate in early caregiving experiences [2, 3, 8]. These internal working models persist into adulthood and influence the way individuals perceive intimacy, communication, and vulnerability, factors which are central to sexual relationships and contraceptive negotiation. Securely attached individuals tend to be more confident in their relationships and are thus more likely to communicate openly and plan contraceptive use effectively. In contrast, anxiously attached individuals may fear abandonment and seek closeness through unprotected sex or avoid discussions around contraception that may threaten the relationship. Avoidantly attached individuals may avoid emotional intimacy and discussions of sexual responsibility, while

those with fearful-avoidant styles may experience inner conflict, resulting in ambivalence or inconsistency in contraceptive behaviour [4, 5, 9].

Empirical studies suggest that securely attached individuals display higher contraceptive intent and more consistent use [4, 10]. Conversely, those with insecure attachments, particularly anxious and avoidant, are more prone to inconsistent or non-use. These patterns appear to reflect the influence of attachment styles on key relational processes such as trust, fear of rejection, and emotional regulation. For example, anxiously attached women may avoid raising contraceptive concerns for fear of being perceived as distrustful or pushing their partners away, whereas avoidantly attached individuals might dismiss the importance of emotional or sexual planning altogether. These relational scripts have direct consequences for contraceptive behaviour but remain understudied in developing countries, especially in Sub-Saharan Africa.

Within the South African context, factors such as partner control, socioeconomic dependency, and social stigma can further complicate contraceptive negotiation, particularly for female students who are in transitional phases of their relational and financial independence. For instance, studies show that some female students engage in transactional sexual relationships due to economic constraints, limiting their autonomy in negotiating safe sex [6, 11]. In such cases, attachment insecurity may not only shape individual behaviour but also exacerbate vulnerability within unequal power dynamics. Psychological resilience, communication patterns, and emotional regulation, core aspects of attachment, can mediate or compound these challenges.

This study is thus grounded in the premise that attachment styles may provide a valuable psychological lens through which to understand contraceptive intent [2, 4]. By focusing on female students at the University of Limpopo, the research aims to broaden our understanding of the psychosocial dimensions of reproductive health. In doing so, it seeks to inform more nuanced and contextually sensitive interventions that go beyond awareness and access, targeting the affective and relational aspects that influence young women's choices and behaviours [7, 9].

Furthermore, the study responds to a notable gap in current literature. Much of the existing research on attachment and contraceptive behaviour has been conducted in high-income countries, often using clinical or experimental samples [5]. Few studies have explored how attachment theory applies in resource-constrained or culturally diverse settings such as rural South Africa. Even fewer have focused on female university students, a population simultaneously navigating independence, academic pressures, and evolving romantic identities [10-13]. As such, this research provides a unique contribution by contextualising global psychological theory within the lived realities of South African students.

Recognizing the multifaceted nature of contraceptive choices, the study adopts a holistic perspective that integrates individual psychological factors with broader

structural variables such as socioeconomic status, healthcare access, and cultural expectations [12, 13]. For example, a securely attached individual might still face systemic barriers, such as clinic stockouts or provider bias, that prevent contraceptive use. Conversely, a woman with insecure attachment may have full access to contraception but struggle to use it consistently due to fear, mistrust, or conflict avoidance in her relationship [5]. By bridging these internal and external dimensions, the study seeks to offer a more comprehensive framework for understanding and addressing contraceptive behaviour.

In line with this, attachment-based interventions may be worth exploring. While most sexual health programmes focus on knowledge dissemination or service provision, few consider the psychological readiness or interpersonal skills necessary for effective contraceptive use. If attachment styles influence relationship communication, autonomy, and trust, then interventions that build secure relational patterns could indirectly enhance contraceptive decision-making. These findings could hold important implications for campus health services, counselling initiatives, and future reproductive health strategies aimed at young adults.

In summary, the conceptual and empirical foundations for the study are outlined as the complex influences on contraceptive behaviour and highlight a specific psychological factor that is, attachment style, that warrants deeper investigation. By focusing on a South African university context, the research offers a timely and relevant contribution to both attachment and public health literature. Ultimately, the research provides a more holistic understanding of reproductive decision-making and contributes to improved support systems for young women navigating these choices.

2. RESEARCH METHODOLOGY

2.1. Study Design

This study employed a quantitative, non-experimental correlational cross-sectional survey research design. It was to examine the relationship between different attachment styles, that is, secure, anxious, and avoidant, and levels of contraceptive intent among female students at UL. A correlational design was selected as it enables the statistical analysis of naturally occurring variables without manipulation [14]. Multinomial logistic regression was used to analyze the strength and direction of the associations between the independent variables (attachment styles) and the categorical outcome variable (levels of contraceptive intent), allowing for comparison across multiple intent categories simultaneously [15].

2.2. Sampling

Participants were recruited using convenience sampling from undergraduate classes and campus announcements. Out of 207 students approached, 180 met eligibility criteria, provided consent, and completed the questionnaire (response rate = 87%). Inclusion criteria were: (1) identification as female; (2) aged 18–30 years; (3) sexually active within the past 12 months; and (4) able

to provide informed consent. Students who did not meet these criteria or who submitted incomplete questionnaires were excluded from the final analysis to ensure data integrity and validity of the statistical results [14].

The final sample ($N = 180$) was determined through feasibility and guided by comparable South African and international cross-sectional studies using similar psychological instruments. This sample met the minimum threshold of 15 cases per predictor for multinomial logistic regression, ensuring statistical adequacy while maintaining contextual realism for a single-site study.

2.3. Procedure

The research was conducted over a four-week period during the academic semester. Data were collected between August and September 2023. Participants were recruited through in-class announcements and digital noticeboards across various departments at the institution. Those who expressed interest were provided with clear instructions on how to participate in the study. Data were collected using a self-administered questionnaire, made available in both digital and paper formats to maximize accessibility. The online version was distributed a secure survey platform (Qualtrics), while printed questionnaires were distributed and collected by trained research assistants. Participants were instructed to complete the questionnaire independently and return completed paper forms in sealed envelopes to designated collection boxes. This dual-mode approach was adopted to reduce barriers to participation and improve response rates [16, 17].

The use of anonymous, self-administered surveys was also intended to reduce social desirability bias and encourage more honest responses, particularly given the sensitive nature of the topics explored. Potential biases such as social desirability and sample bias were minimized through anonymous, self-administered surveys and voluntary participation. However, response bias remains a possibility [18].

2.4. Data Collection Instruments

Data were collected using a self-administered structured questionnaire comprising three parts. The first section recorded demographic information such as age, year of study, relationship status, religious affiliation, and sexual history. The second section measured attachment styles using a shortened version of the Experiences in Close Relationships-Revised (ECR-R) questionnaire [19], rated on a 7-point Likert scale. This instrument is widely used and validated across diverse contexts, including university student populations and cross-cultural settings, due to its strong psychometric properties and ability to reliably assess adult attachment dimensions [19–21]. The third section assessed contraceptive intent using an adapted version of Ajzen's (1991) Theory of Planned Behaviour (TPB). Items were rated on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," focusing on behavioural intentions, attitudes, and perceived control. The instrument was piloted with 20 female students from UL, and no problems with ambiguity or understanding were noted. The pilot study was not included in the final sample.

2.4.1. Hypotheses

The hypotheses are stated as directional research hypotheses based on prior theoretical and empirical literature. This format is acceptable in social sciences and behavioural research when predictions are clearly grounded in theory, such as attachment theory. While not formally paired with null hypotheses, statistical testing assumes a default null. The structure allows for precise, theory-driven examination of expected relationships [14].

- There is a positive relationship between secure attachment and high contraceptive intent among female students at the institution.
- There is a positive relationship between avoidant attachment and high contraceptive intent among female students at the institution.
- There is a positive relationship between anxious attachment and low contraceptive intent among female students at the institution.

2.5. Data Analysis

Data were analyzed using IBM SPSS v29. Descriptive statistics summarized demographic and psychosocial characteristics derived from the Demographic Information Form, the Experiences in Close Relationships-Revised (ECR-R) short form, and the Contraceptive Intent Scale adapted from the Theory of Planned Behaviour. Multinomial logistic regression was used to examine associations between attachment style categories (secure, anxious, avoidant) and levels of contraceptive intent (low, moderate, high). The model included covariates for age, relationship status, and socioeconomic background. Assumptions of normality, multicollinearity, and linearity of the logit were checked prior to analysis. Variance inflation factors (VIFs) and tolerance values confirmed acceptable multicollinearity levels. Odds ratios, *p*-values, and 95% confidence intervals were reported for all predictors, and significance was set at $p < 0.05$. Model fit was evaluated using pseudo- R^2 [22] and likelihood-ratio chi-square tests. Missing data were minimal, and incomplete cases were excluded listwise. No sensitivity analyses were conducted.

It should be noted that the ECR-R short form contained two subscales, avoidance and anxiety, each rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Mean scores were computed for each subscale, and participants were classified into low, moderate, or high categories based on tertile splits. The instrument demonstrated good reliability ($\alpha = 0.84$) and cross-cultural validity in South African university samples. Potential confounders, including age, year of study, relationship status, and socioeconomic background, were assessed and entered as covariates in the regression model; none reached statistical significance and were excluded from the final model.

2.6. Reliability and Validity

Reliability was assessed using Cronbach's alpha. The ECR-R subscales yielded coefficients of 0.85 (secure), 0.87

(anxious), and 0.82 (avoidant), while the contraceptive intent scale achieved an alpha of 0.78, indicating acceptable internal consistency [22]. Content validity was supported through expert review by lecturers in psychology and reproductive health. Construct validity was confirmed by the established use of the ECR-R and TPB in similar studies [19]. Face validity was ensured through pilot testing, and no major issues with item clarity were reported.

2.7. Ethical Considerations

Ethical approval for the study was granted by the Turfloop Research Ethics Committee (TREC) under NHREC registration number REC-310111-031. All participants provided informed consent before participation. The study adhered to the ethical guidelines set by the Health Professions Council of South Africa (HPCSA, Psychology Division). Participation was voluntary, and anonymity and confidentiality were preserved throughout. Students were informed of their right to withdraw at any point without penalty. Confidentiality was maintained by ensuring that no identifying information was collected, and all responses were anonymized during data entry and analysis [14].

3. RESULTS

The findings of the research investigating the relationship between attachment styles and contraceptive intent among female students at UL are presented. Both descriptive and inferential statistics are provided. Descriptive results summarize demographic data and distributions of attachment styles and contraceptive intent. Inferential results from a multinomial logistic regression analysis assess the predictive value of attachment styles on levels of contraceptive intent. It must be noted that although a convenience sample was used, multinomial logistic regression was applied to explore theoretical associations between attachment styles and contraceptive intent. This is acceptable in behavioural research where the aim is not broad generalizability but hypothesis testing within the sample [23]. The data met assumptions for regression, including categorical variables and an adequate sample size. While generalizability is limited, the analysis offers valuable insights into internal trends. The structured outcome categories and careful data cleaning further support the validity of using inferential statistics in this context.

Table 1 summarizes the demographic characteristics of the sample that was recruited. Most participants were in their second or third year of study, with a fairly even distribution between those in relationships and those who were single.

Table 2 shows the distribution of attachment styles and levels of contraceptive intent. Secure attachment was the most common, and moderate intent was the most frequently reported category.

In Table 3, the results of the multinomial logistic regression are provided. While the overall model was not significant, anxious and avoidant attachment styles showed significant associations with contraceptive intent.

Table 1. Demographic characteristics of participants (N = 180).

Variable	Frequency (%)
Age (mean ± SD)	21.4 ± 2.3
Relationship Status	
- Single	96 (53.3%)
- In a relationship	84 (46.7%)
Year of Study	
- First Year	38 (21.1%)
- Second Year	62 (34.4%)
- Third Year	54 (30.0%)
- Fourth Year	26 (14.5%)

Table 2. Distribution of attachment styles and contraceptive intent.

Category	Frequency (%)
Secure Attachment	74 (41.1%)
Anxious Attachment	57 (31.7%)
Avoidant Attachment	49 (27.2%)
High Contraceptive Intent	64 (35.6%)
Moderate Contraceptive Intent	71 (39.4%)
Low Contraceptive Intent	45 (25.0%)

Table 3. Multinomial logistic regression predicting contraceptive intent by attachment style. Predictor | B (High Intent) | p-value (High Intent) | B (Moderate Intent) | p-value (Moderate Intent).

		Intent)	Intent)	(Moderate Intent)
Secure	0.224	.284	0.187	.352
Attachment				
Anxious	0.913*	.042	0.301	.180
Attachment				
Avoidant	-0.756*	.038	-0.432	.091
Attachment				

Note: *p < 0.05

Furthermore, although the overall regression model was non-significant ($\chi^2(6) = 8.992, p = 0.774$), individual predictors revealed contrasting effects: anxious attachment increased the odds of high contraceptive intent nearly two-fold (OR = 2.49, 95% CI [1.03–6.01]), whereas avoidant attachment decreased likelihood (OR = 0.47, 95% CI [0.23–0.92]). Secure attachment showed no meaningful association.

Pseudo R-squared values indicated weak model fit: Cox and Snell $R^2 = 0.023$, Nagelkerke $R^2 = 0.116$, McFadden $R^2 = 0.106$. These suggest that while psychological

variables play a role, other contextual factors likely contribute more significantly to contraceptive decisions in this population.

4. DISCUSSION

This study explored the relationship between attachment styles and contraceptive intent among female university students at UL. Grounded in attachment theory, the study hypothesized specific associations between secure, anxious, and avoidant attachment styles and varying levels of contraceptive intent. The findings

partially supported these hypotheses, offering insight into the psychological factors that may influence reproductive decision-making among young women in a South African context.

While the overall multinomial logistic regression model was not statistically significant, individual attachment styles showed meaningful associations with contraceptive intent. Anxious attachment was positively associated with high contraceptive intent, whereas avoidant attachment was negatively associated with high intent. These findings align with and extend prior research demonstrating that attachment insecurity influences sexual and reproductive behaviours [4, 5]. The positive association between anxious attachment and high contraceptive intent may initially appear counterintuitive, as anxious individuals are often characterized by heightened emotional dependency and fear of abandonment. However, this group may also exhibit heightened concern about the relational consequences of unintended pregnancy and thus be more motivated to use contraception as a way of preserving relational security [7]. Previous research has shown that anxiously attached individuals may engage in pre-emptive behaviours to avoid perceived relational disruptions [3], which may include contraceptive use as a protective strategy.

In contrast, the negative association between avoidant attachment and contraceptive intent is consistent with theoretical expectations and previous empirical studies [4, 10]. Avoidantly attached individuals often de-emphasize intimacy and may view reproductive planning discussions as intrusive or emotionally uncomfortable. Consequently, they may avoid proactive sexual health behaviours, including consistent contraceptive use. This finding supports previous literature that links avoidant attachment with lower levels of communication and planning in sexual relationships [8]. Interestingly, secure attachment was not a significant predictor of contraceptive intent in this sample, diverging from prior studies that have found positive associations between secure attachment and responsible sexual behaviours [3, 19]. One possible explanation is that in this university sample, other contextual or structural factors, such as partner influence, access to services, or socio-cultural attitudes, may play a more dominant role in shaping behaviour than attachment style alone. This finding reinforces the importance of adopting an integrated model that accounts for both psychological and contextual variables in understanding contraceptive behaviour [12, 13].

Additionally, the low pseudo-R-squared values observed in the regression analysis indicate that while attachment styles contribute to the variance in contraceptive intent, they do not account for most of it. This underscores the complexity of reproductive decision-making, which may also be shaped by educational, relational, cultural, and economic factors not fully captured in the current model [6, 11]. Future research should consider incorporating such variables into predictive models to achieve a more comprehensive understanding. The findings also have practical

implications for public health interventions. Sexual and reproductive health programmes in university settings could be enhanced by incorporating psychological dimensions such as attachment style into their design. Interventions tailored to specific attachment-related needs may improve communication, decision-making, and ultimately contraceptive adherence among students [4].

In summary, these nuanced findings partially support attachment theory within reproductive decision-making. The heightened contraceptive intent among anxiously attached participants may reflect heightened relationship vigilance and desire for control, whereas avoidant attachment corresponds with relational disengagement and lower intent. Weak model fit underscores that psychological variables explain only a modest portion of variance, emphasizing the necessity of incorporating partner dynamics, service accessibility [24], and cultural norms into future predictive frameworks. Psychologically-informed reproductive-health counselling that fosters secure attachment patterns may enhance contraceptive consistency among students. These findings support previous literature and provide a foundation for future research to build more complex models that integrate both psychological and structural factors in reproductive health behaviours.

5. LIMITATIONS

This study used a convenience sample drawn from a single university, which limits the generalizability of the findings to broader populations. Self-reported data may be subject to social desirability or recall bias. Another limitation is that the cross-sectional design restricts causal interpretations, and other potential influences on contraceptive intent, such as peer norms or relationship dynamics, were not measured. Additionally, while the regression model tested theoretical relationships, its low explanatory power indicates that other variables not included in the analysis may have a greater influence. The findings are not broadly generalizable beyond the sampled schools and population, given the purposive sampling and rural focus; however, they offer meaningful insights into similar contexts.

CONCLUSION

This research examined the relationship between attachment styles and contraceptive intent among female students at the University of Limpopo. While the overall regression model was not statistically significant, individual attachment styles, particularly anxious and avoidant, indicated meaningful associations with contraceptive intent. These findings suggest that psychological factors may play an important role in shaping reproductive behaviour, complementing the structural and socio-cultural factors often studied. The results provide partial support for attachment theory in the context of sexual and reproductive decision-making. Although secure attachment did not predict intent, the nuanced differences among insecure styles offer valuable insights. This highlights the need for tailored interventions that consider emotional and relational dynamics.

University health programmes could benefit from integrating psychosocial education alongside contraceptive access. The study contributes to the growing recognition of mental health in public health frameworks. Future research should explore how attachment interacts with partner dynamics, cultural beliefs, and contraceptive access.

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

TA	= Thematic Analysis
DOE	= Department of Education
STIs	= Sexually Transmitted Infections
TREC	= Turfloop Research Ethics Committee
HPCSA	= Health Professions Council of South Africa

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical clearance was given by the Research Ethics Committee (TREC) under NHREC registration number REC-310111-031 (TREC) number TREC/319/2017/ PG, South Africa.

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

All participants provided informed consent before participation.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of this study are available from the corresponding author [P.M] upon reasonable request.

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None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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