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Prediction of Women's Sexual Well-Being Based on Spouses' Autistic Personality Traits, Alexithymia, and Empathy: The Mediating Role of Loneliness

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A B S T R A C T

Objective: This study aimed to predict women's sexual well-being based on their spouses' autistic personality traits, alexithymia, and empathy, with loneliness examined as a mediating variable.

Methods and Materials: This descriptive–correlational study was conducted among married students from technical faculties of universities in Tehran during the 2025 academic year. A total of 300 heterosexual couples were selected using convenience sampling. Measurement instruments included the Autism-Spectrum Quotient, the Toronto Alexithymia Scale (TAS-20), the Empathy Scale, the UCLA Loneliness Scale, and the Sexual Well-Being Scale. Data analyses were carried out using structural equation modeling (SEM) through SPSS and SmartPLS software. Reliability and validity indices—including Cronbach's alpha, composite reliability, and average variance extracted (AVE)—indicated strong psychometric adequacy of all constructs. Model fit was evaluated using R^2, Q^2, and SRMR indices.

Findings: Spouses' autistic personality traits showed a significant negative effect on women's sexual well-being ($\beta = -0.378$, $t = 7.507$, $p < 0.001$). Alexithymia demonstrated a very strong negative relationship with women's sexual well-being ($\beta = -0.848$, $t = 7.922$, $p < 0.001$). Conversely, empathy exhibited a significant positive effect on sexual well-being ($\beta = +0.333$, $t = 7.147$, $p < 0.001$). Loneliness significantly mediated the relationships between emotional traits and sexual well-being ($\beta = -0.418$, $t = 3.712$, $p < 0.01$). The structural model showed high predictive power, with $R^2 = 0.977$ for women's sexual well-being and acceptable Q^2 and SRMR values.

Conclusion: Emotional and personality traits of male partners—including autistic characteristics, alexithymia, and empathy—play a crucial role in shaping women's sexual well-being, with loneliness serving as a significant mediating mechanism.

Keywords: *sexual well-being; autistic personality traits; alexithymia; empathy; loneliness*

1. Introduction

Sexual well-being is increasingly recognized as a multidimensional construct encompassing physical, emotional, relational, and psychological components that contribute to overall quality of life across the lifespan (von Humboldt et al., 2025). Over the past decade, scholars have emphasized that sexual well-being extends beyond the absence of sexual dysfunction and constitutes a fundamental dimension of human flourishing closely tied to intimacy, communication, and psychological adjustment (Chernyavska et al., 2022; Rao et al., 2024; Restrepo et al., 2022). Contemporary evidence suggests that sexual well-being is shaped by complex interactions among emotional, cognitive, and interpersonal factors, reinforcing the need for integrative, theory-driven models to understand its predictors (del Mar Sánchez-Fuentes et al., 2014; Dubé et al., 2020). Among these factors, personality traits, emotional processing abilities, and interpersonal communication have emerged as central determinants, particularly in romantic and marital relationships.

In recent years, a growing body of research has highlighted the influence of autistic personality traits on relational dynamics, intimacy, and sexual functioning. Individuals with autism spectrum disorder (ASD), as well as those exhibiting subclinical autistic traits, often demonstrate differences in social communication, emotional understanding, and sensory processing that may affect the formation and maintenance of intimate relationships (Belluzzo et al., 2025; Restrepo et al., 2022; Williams & Williams, 2010). Autistic traits in non-clinical adults—often referred to as the "broad autism phenotype"—include rigidity, restricted interests, reduced social intuition, and challenges in emotional reciprocity (Jamil et al., 2017; Morrison et al., 2018). These traits may impair empathy, increase interpersonal misunderstandings, and reduce emotional availability, all of which are essential components of sexual well-being (Cargill et al., 2024; Yew et al., 2023). Furthermore, neurological and cognitive differences associated with autistic traits may influence emotional regulation and sensory experiences during sexual activity, potentially diminishing satisfaction and intimacy (Greenberg, 2016; Schroeder et al., 2010). Narrative and empirical reviews increasingly show that autistic individuals often face challenges in establishing emotional connection and interpreting relational cues, thereby influencing sexual and romantic experiences (Belluzzo et al., 2025; Williams et al., 2024). Thus, investigating the role of autistic personality tendencies in marital sexual well-being is crucial for understanding relational outcomes in couples where one partner shows elevated autistic traits.

Parallel to autistic traits, alexithymia—characterized by difficulty identifying and describing emotions, and a tendency toward externally oriented thinking—is another factor linked to relational dissatisfaction and sexual dysfunction (Chen et al., 2011; Mansouri et al., 2019). Alexithymia has been repeatedly associated with reduced emotional intimacy, impaired communication, and heightened interpersonal distance in couples (Esmaeili Anamogh et al., 2024; Mohammadi & Ganji, 2024). Its high comorbidity with autistic traits is well documented, with research emphasizing that emotional processing deficits may serve as a core mechanism linking autism-related characteristics to relationship strain (Cargill et al., 2024; Miri & Najafi, 2017). Studies show that alexithymic individuals struggle to interpret emotional cues, express affection, and respond empathically to partners, which are central processes in developing satisfying sexual relationships (Chen et al., 2011; Hamili et al., 2024). Moreover, emotional disconnection and suppressed affect can compromise sexual responsiveness and diminish subjective satisfaction (Ashdown et al., 2011; Mohammadi & Ganji, 2024). Evidence also suggests that alexithymia may predict marital conflict and sexual dissatisfaction, particularly among women whose partners show high emotional inexpressiveness (Alizadeh et al., 2024; Honarparvaran et al., 2010).

Empathy, conversely, is widely recognized as a positive relational capacity that enhances intimacy, trust, and sexual satisfaction. Empathic responsiveness enables partners to accurately perceive each other's emotional and physical needs, negotiate desires, and build mutual understanding, all of which are essential to meaningful sexual connection (Byers & Macneil, 2006; Simonelli et al., 2016). Studies have shown that higher empathy levels are associated with stronger emotional bonds, more effective communication, and greater marital satisfaction (Litzinger & Gordon, 2005; Williams et al., 2024). In contrast, low empathy—often observed among individuals with elevated autistic traits—has been associated with relationship dissatisfaction, conflict, and reduced sexual well-being (Jamil et al., 2017; Yew et al., 2023). The relationship between empathy and sexual well-being extends across cultures and relationship types, suggesting a universal psychological mechanism linking emotional attunement to physical intimacy (Santtila et al., 2007; Sohili Pishkanari & Basharpoor, 2017). Given

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the interplay between empathy, emotional expression, and relationship functioning, examining empathy as a predictor of sexual well-being offers valuable insight into the dyadic processes shaping marital sexuality.

Loneliness, a subjective sense of emotional or social disconnection, appears to serve as a crucial mediating factor linking psychological traits to marital and sexual outcomes. Studies show that loneliness is not merely a lack of social contact but reflects a deeper emotional experience tied to unmet intimacy needs and poor relational quality (Feng, 2011; Miri & Najafi, 2017). Loneliness in marriages is associated with lower sexual desire, reduced emotional closeness, and diminished satisfaction (del Mar Sánchez-Fuentes et al., 2014; Dubé et al., 2020). Emotional alexithymia and autistic traits both predict heightened loneliness due to deficits in emotional reciprocity and difficulties forming deep interpersonal bonds (Chen et al., 2011; Morrison et al., 2018). Furthermore, loneliness has been linked to negative psychological states such as distress, anxiety, and reduced well-being, all of which may impair sexual functioning (Chernyavska et al., 2022; Pandey & Misra, 2025). Loneliness also mediates the connection between emotional deficits and satisfaction in romantic relationships, highlighting its role as an intermediate psychological mechanism (Feng, 2011; Mansouri et al., 2019). Research on couples indicates that when one partner exhibits restricted emotional expression, the other may experience feelings of isolation, thereby reducing relational and sexual intimacy (Greenberg & Goldman, 2008; Hamili et al., 2024). Thus, loneliness may serve as a mediating variable linking autistic traits, alexithymia, and empathy to sexual well-being, making it essential to examine within an integrative model.

In addition to intrapersonal emotional factors, relational dynamics such as communication patterns, intimacy, and mutual responsiveness significantly influence sexual well-being. Studies show that communication quality is closely associated with marital and sexual satisfaction (Ashdown et al., 2011; Litzinger & Gordon, 2005). The interpersonal exchange model of sexual satisfaction posits that mutual responsiveness and emotional attunement are foundational to fulfilling sexual experiences (Byers & Macneil, 2006). Cross-cultural findings also underscore the importance of relational harmony, emotional security, and empathic communication in sustaining sexual well-being across diverse populations (Banaei et al., 2023; Khan, 2025). Psychological well-being, emotional intelligence, and intimacy processes have also been linked to romantic satisfaction, particularly among adults exhibiting varying degrees of autistic-like traits (Tomás et al., 2025; Williams et al., 2024). Emotional regulation, including the capacity to manage distress and sustain positive affect, has been shown to be a central predictor of sexual health among women (Dubé et al., 2020; Meyers et al., 2022). In addition, interdisciplinary theories such as the interprocessual-self framework highlight the role of relational neuropsychological mechanisms that integrate empathy, motivation, and emotional bonding to support intimate functioning (Luis et al., 2022).

Biopsychosocial perspectives on sexuality have further clarified how emotional vulnerabilities such as alexithymia, psychological distress, and insecure communication patterns interact with relational factors to diminish sexual well-being (Vandermassen, 2004; Waller & Scheidt, 2006). Clinical studies suggest that emotion-focused and mindfulness-based interventions can enhance sexual satisfaction by improving emotional expression, reducing avoidance, and deepening partner connection (Honarparvaran et al., 2010; Meyers et al., 2022). Among women experiencing intense emotional distress or relational conflict, psychological traits of their partners play a significant role in shaping their sexual well-being (Alizadeh et al., 2024; Mohammadi & Ganji, 2024). In particular, difficulties in emotional processing among male partners may exacerbate relational disconnect, contributing to women's sexual dissatisfaction (Esmaeili Anamogh et al., 2024; Pandey & Misra, 2025).

Taken together, the literature demonstrates that autistic traits, alexithymia, and empathy exert powerful and multifaceted influences on relational functioning and sexual well-being. These influences often operate through emotional and interpersonal mechanisms such as loneliness, communication patterns, and emotional attunement. However, despite extensive research on each construct independently, few studies have integrated them into a comprehensive model explaining women's sexual well-being within marital relationships, particularly in cultural contexts where emotional expression and intimacy norms may differ significantly. Therefore, the aim of the present study is to predict women's sexual well-being based on their spouses' autistic personality traits, alexithymia, and empathy through the mediating role of loneliness.

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2. Methods and Materials

2.1. Study design and Participant

The present study employed a descriptive–correlational methodology based on structural equation modeling, and from the perspective of its objective, it was a fundamental (basic) research design. The statistical population consisted of all married women and men enrolled in the technical faculties of universities in Tehran during the 2025 academic year (a total of 300 couples). The sample size was determined according to structural equation modeling criteria, requiring a minimum of 250 participants for each group. To compensate for potential attrition, 520 questionnaires were distributed. The sampling method used in this study was multi-stage random sampling. First, a list of universities with technical faculties was prepared; then, several departments within each faculty were randomly selected, followed by the random selection of classes within those departments. Ultimately, all married individuals in each selected class were invited to participate as the statistical sample.

2.2. Measures

The Autism-Spectrum Quotient (AQ) was developed by Simon Baron-Cohen and colleagues at the Autism Research Centre at the University of Cambridge in 2001 as a self-report instrument for assessing the degree of autistic personality traits in non-clinical populations. The AQ consists of 50 items covering five subscales: Social Skills, Attention Switching, Attention to Detail, Communication, and Imagination. Items are rated on a four-point Likert scale ("definitely agree" to "definitely disagree"), with higher scores indicating stronger autistic traits. Scoring follows a binary method in which responses consistent with autistic characteristics receive one point, yielding a total score from 0 to 50. Numerous studies across different cultures and populations have confirmed the AQ's construct validity, convergent validity, and internal consistency reliability, supporting its use in psychological research and clinical screening.

The Toronto Alexithymia Scale (TAS-20), created by Graeme J. Taylor, R. Michael Bagby, and James D. A. Parker in 1994, is one of the most widely used standardized instruments for assessing alexithymia. The tool includes 20 items organized into three subscales: Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF), and Externally Oriented Thinking (EOT). Respondents rate each item on a five-point Likert scale ranging from strongly disagree to strongly agree, with higher scores reflecting greater alexithymic traits. Total scores range from 20 to 100, with established cutoff points indicating low, moderate, or high alexithymia. The TAS-20 has been validated extensively in diverse cultural and clinical contexts, and its factor structure, internal consistency, and test–retest reliability have been repeatedly confirmed in previous studies.

The Empathy Scale used in this study is commonly attributed to Mark H. Davis, who developed the Interpersonal Reactivity Index (IRI) in 1980, a multidimensional self-report instrument designed to capture cognitive and emotional components of empathy. The scale includes 28 items divided into four subscales: Perspective Taking, Empathic Concern, Fantasy, and Personal Distress. All items are rated on a five-point Likert scale ranging from "does not describe me well" to "describes me very well," with subscale scores calculated by summing relevant items. Higher scores indicate greater empathic tendencies across cognitive and affective domains. The IRI has demonstrated strong psychometric support, including construct validity, convergent validity with behavioral and physiological indices of empathy, and high reliability across numerous international studies.

The UCLA Loneliness Scale, originally developed by Daniel Russell, Letitia Peplau, and Mary Ferguson in 1978 and revised to its widely used Version 3 in 1996, is a comprehensive self-report measure of subjective feelings of social isolation and loneliness. The scale includes 20 items representing both positively and negatively worded statements, and although it does not employ formal subscales, items collectively assess the overall intensity of loneliness. Responses are given on a four-point Likert scale (never, rarely, sometimes, often), with negatively worded items reverse-scored and total scores ranging from 20 to 80, where higher scores indicate greater loneliness. The UCLA Loneliness Scale has been validated in numerous populations worldwide, consistently demonstrating excellent internal consistency, factorial stability, and test–retest reliability.

The Sexual Well-Being Scale, developed by Kathryn J. Boehmer and colleagues in the 1990s (or by the specific author relevant to the version you used), is a multidimensional instrument designed to assess individuals' subjective perceptions of satisfaction, functioning, and emotional experiences related to sexual life. Depending on the version, the scale typically includes several subscales,

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such as sexual satisfaction, sexual functioning, sexual self-esteem, and relational aspects of sexual well-being, with a total of 10–30 items rated on a Likert-type scale. Higher scores reflect greater levels of sexual well-being across emotional, cognitive, and relational domains. Extensive psychometric evaluations have confirmed the scale's construct validity, criterion validity, internal consistency, and suitability for research involving both clinical and non-clinical samples.

2.3. Data Analysis

For data analysis, structural equation modeling was performed using SmartPLS 3.3 software.

3. Findings and Results

Table (1) presents the Cronbach's alpha values for the research constructs.

Table 1

Cronbach's Alpha Coefficient, Composite Reliability, and Average Variance Extracted (AVE) for Research Constructs

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Men's autistic personality traits	0.977	0.979	0.569
Pragmatic language	0.954	0.961	0.679
Rigid and inflexible personality	0.934	0.945	0.598
Introverted personality	0.916	0.928	0.524
Men's alexithymia	0.871	0.907	0.66
Externally oriented thinking	0.916	0.932	0.63
Difficulty describing feelings	0.856	0.897	0.635
Difficulty identifying feelings	0.907	0.927	0.644
Men's empathy	0.931	0.944	0.676
Women's loneliness	0.975	0.977	0.539
Peer relations	0.901	0.917	0.585
Family relations	0.951	0.958	0.6
Emotional indicators of loneliness	0.914	0.93	0.579
Women's sexual well-being	0.975	0.975	0.977
Orgasm	0.894	0.894	0.934
Arousal	0.865	0.867	0.909
Sexual pain	0.885	0.886	0.929
Satisfaction	0.892	0.893	0.933
Lubrication	0.925	0.925	0.947
Desire	0.926	0.926	0.964

Based on Table (1), the Cronbach's alpha values exceed 0.70, indicating that the questionnaire items possess sufficient internal validity and consistent item homogeneity. Additionally, the composite reliability values are all above 0.70, confirming the internal reliability of the research constructs. The average variance extracted (AVE) values for the constructs are 0.50 or higher, demonstrating that each construct explains more than half of the variance in its corresponding indicators.

The most common criterion used to evaluate the structural model is the coefficient of determination (R^2). The R^2 value ranges from zero to one, with higher values indicating greater predictive accuracy. The table below presents the coefficient of determination for the endogenous constructs of the research model.

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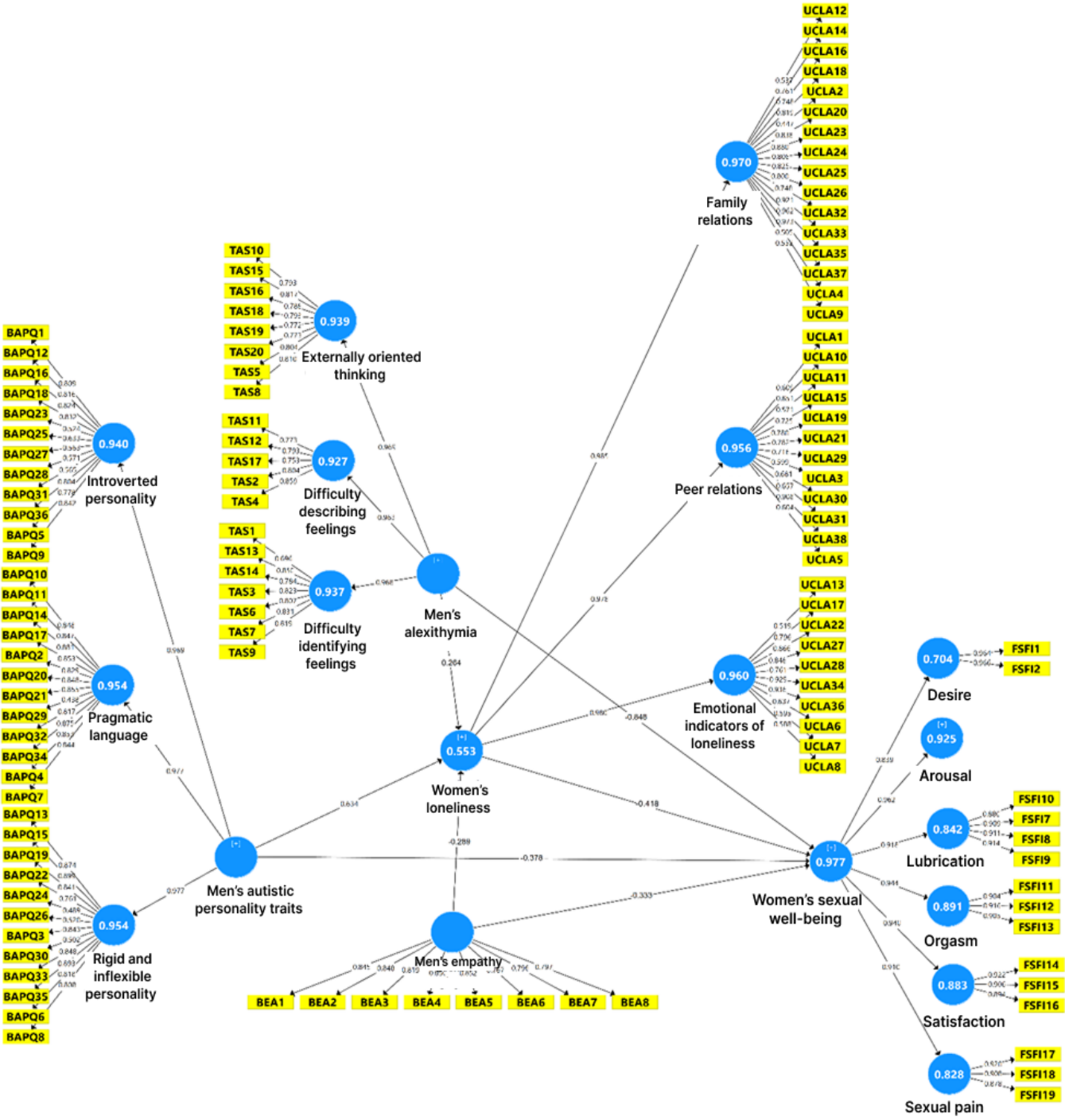
Figure 1

Conceptual Model of the Study with Path Coefficients and Factor Loadings



As illustrated in Figure 1, all research items have factor loadings greater than 0.30; therefore, no item removal is required.

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Figure 2

Conceptual Model of the Study with t-Values

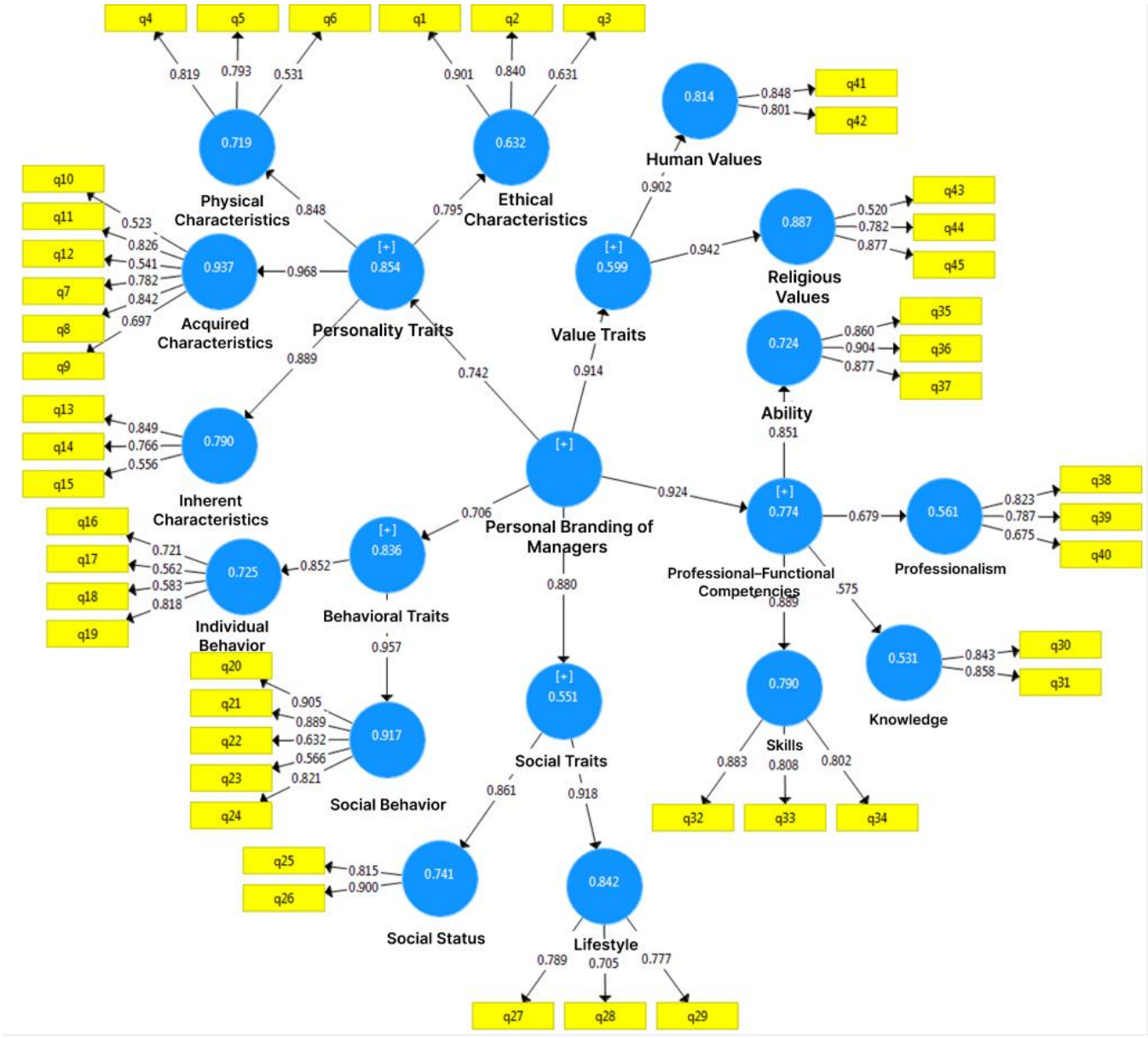

Table (2) presents the results related to the confirmation or rejection of the variable paths.

Table 2

Results of Path Confirmation or Rejection in the Overall Model

Row	Path	Path Coefficient	Standard Error	t-Statistic	p-Value	Test Result
1	Women's loneliness → Women's sexual well-being	−0.418	0.113	3.712	0.003	Accepted
2	Men's alexithymia → Women's loneliness	0.264	0.12	2.197	0.014	Accepted
3	Men's alexithymia → Women's sexual well-being	−0.848	0.107	7.922	0.001	Accepted
4	Men's empathy → Women's loneliness	−0.289	0.103	2.807	0.011	Accepted
5	Men's empathy → Women's sexual well-being	0.333	0.047	7.147	0.001	Accepted
6	Men's autistic personality traits → Women's loneliness	0.634	0.182	3.486	0.009	Accepted
7	Men's autistic personality traits → Women's sexual well-being	−0.378	0.05	7.507	0.001	Accepted

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Table (2) indicates the confirmation or rejection of the study's hypotheses. As is well established, a hypothesis is supported when the t-value exceeds 1.96, allowing the researcher to claim hypothesis confirmation at a 5% error level (95% confidence level). Furthermore, a hypothesis is confirmed when the p-value is less than 0.05; if the p-value exceeds 0.05, the hypothesis is rejected.

Table 3

Coefficient of Determination (R^2) for Endogenous Constructs in the Research Model

Variables	R^2	Adjusted R^2
Women's loneliness	0.553	0.547
Peer relations	0.956	0.956
Orgasm	0.891	0.891
Women's sexual well-being	0.977	0.977
Arousal	0.925	0.925
Externally oriented thinking	0.939	0.939
Sexual pain	0.828	0.827
Difficulty describing feelings	0.927	0.927
Difficulty identifying feelings	0.937	0.937
Satisfaction	0.883	0.883
Lubrication	0.842	0.841
Family relations	0.97	0.97
Pragmatic language	0.954	0.953
Rigid and inflexible personality	0.954	0.954
Introverted personality	0.94	0.94
Desire	0.704	0.703
Emotional indicators of loneliness	0.96	0.959

Based on the findings in Table 3, the values of the coefficient of determination represent the dependent variables of the study. Considering that the R^2 values for most variables fall within the range of 0.50 to 0.75, the structural model of the research demonstrates an acceptable level of fit in terms of statistical explanatory power. The results of Table (4) also show the predictive power of the model for the endogenous constructs.

Table 4

Results of the Q^2 Criterion for Endogenous Constructs

Variables	SSO	SSE	Q^2 (= 1 − SSE/SSO)
Women's loneliness	9538	7104.022	0.255
Peer relations	3012	1712.596	0.431
Orgasm	753	227.805	0.697
Women's sexual well-being	4769	1780.121	0.627
Arousal	1004	380.192	0.621
Externally oriented thinking	2008	899.274	0.552
Sexual pain	753	272.635	0.638
Difficulty describing feelings	1255	559.305	0.554
Difficulty identifying feelings	1757	766.109	0.564
Satisfaction	753	234.053	0.689
Lubrication	1004	354.807	0.647
Family relations	4016	1854.855	0.538
Pragmatic language	3012	1200.804	0.601
Rigid and inflexible personality	3012	1413.084	0.531
Introverted personality	3012	1642.88	0.455
Desire	502	187.759	0.626
Men's alexithymia	5020	5020	—
Emotional indicators of loneliness	2510	1212.294	0.517
Men's empathy	2008	2008	—
Men's autistic personality traits	9036	9036	—

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The results in Table 4 indicate that the model has adequate predictive power for the endogenous constructs and confirm the goodness-of-fit of the structural model. A Q^2 value greater than zero shows that the model has meaningful predictive relevance for an endogenous variable, whereas values equal to or less than zero indicate a lack of predictive relevance. As the Q^2 values for the studied constructs are all above zero, the findings support a strong and appropriate predictive fit for the structural model. Table (5) presents the goodness-of-fit index for the structural model.

Table 5

Goodness-of-Fit Index for the Model

Statistic	Value
SRMR (acceptable if < 0.08)	0.053

The SRMR value shown in Table 5 also falls within the acceptable threshold, confirming the adequacy and validity of the structural model proposed by the researcher.

4. Discussion

The findings of the present study demonstrated that spouses' autistic personality traits, alexithymia, and empathy significantly predict women's sexual well-being, with loneliness functioning as a key mediating mechanism. The negative relationship found between autistic traits in men and the sexual well-being of their wives aligns with earlier scholarship showing that individuals with broad autism phenotype characteristics often struggle with emotional reciprocity, relational attunement, and intimacy-building behaviors, which are essential components of marital sexual satisfaction (Belluzzo et al., 2025; Jamil et al., 2017; Morrison et al., 2018). The reduced capacity to accurately perceive emotional cues, coupled with communication rigidity and sensory sensitivity, may contribute to difficulties establishing warm and responsive interactions during intimate encounters (Restrepo et al., 2022; Schroeder et al., 2010). This pattern is consistent with studies indicating that autistic-like traits are associated with reduced relationship satisfaction, lower emotional connection, and impaired sexual dynamics across various stages of romantic partnerships (Williams et al., 2024; Yew et al., 2023). The strong negative effect observed in this study underscores the profound relational implications of autistic traits, suggesting that these characteristics influence not only overt communication challenges but also subtle emotional mechanisms that sustain sexual intimacy.

The results further indicated that alexithymia in men exerted one of the strongest negative effects on women's sexual well-being, which is consistent with research identifying alexithymia as a central predictor of relational dissatisfaction, emotional distance, and sexual problems (Chen et al., 2011; Mansouri et al., 2019). Alexithymia compromises the ability to recognize and express emotions, diminishing partners' capacity to convey affection, provide emotional reassurance, and engage in intimate reciprocity, which are foundational to sexual harmony (Esmaeili Anamogh et al., 2024; Mohammadi & Ganji, 2024). Within the marital context, emotional inexpressiveness can generate misunderstanding, withdrawal, and unresolved tensions, which erode both emotional and sexual closeness. This observation corresponds with studies showing that difficulties in emotional articulation are linked with marital conflict, lowered sexual satisfaction, and increased relational loneliness (Alizadeh et al., 2024; Miri & Najafi, 2017). Furthermore, given the established overlap between alexithymia and autistic traits (Cargill et al., 2024), the simultaneous presence of both may compound relational strain, encouraging a cycle of emotional disengagement that negatively influences sexual well-being. The very strong negative effect of alexithymia found in the present study highlights the importance of emotional competencies in shaping women's sexual responses and relational fulfillment.

In contrast, the positive influence of empathy on sexual well-being supports longstanding theoretical and empirical work emphasizing the role of emotional attunement and perspective-taking in fostering intimacy and sexual satisfaction (Byers & Macneil, 2006; Simonelli et al., 2016). Empathic partners are better equipped to interpret emotional and physiological cues, adapt during intimate exchanges, and co-regulate emotional states—all of which facilitate pleasurable, consensual, and fulfilling sexual interactions (Litzinger & Gordon, 2005; Williams et al., 2024). Studies indicate that empathy strengthens bonds, promotes trust, and enhances mutual responsiveness, ultimately contributing to more satisfying relational and sexual experiences (Santtila et

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al., 2007; Sohili Pishkanari & Basharpoor, 2017). The significant positive effect of empathy observed in this study aligns with cross-cultural findings suggesting that empathic engagement is a universal relational factor supporting sexual well-being across both autistic and non-autistic populations (Khan, 2025; Yew et al., 2023). Empathy may counterbalance emotional limitations associated with autistic traits or alexithymia by fostering understanding, reducing emotional isolation, and promoting supportive communication. This finding reinforces the notion that enhancing empathic capacities can be a key therapeutic target for improving sexual well-being in couples.

The mediating role of loneliness provides further insight into the psychological mechanisms linking emotional functioning and sexual outcomes. The results showed that higher levels of autistic traits and alexithymia predicted greater loneliness in women, which in turn reduced sexual well-being. These findings are consistent with research suggesting that loneliness emerges when relational needs for emotional connection and validation go unmet (Chernyavska et al., 2022; Feng, 2011). Emotional disconnection—stemming from deficits in empathy or emotional expression—can leave partners feeling unseen, unsupported, and misunderstood, which undermines both relational and sexual intimacy (Dubé et al., 2020; von Humboldt et al., 2025). Studies have demonstrated that loneliness is associated with reductions in sexual desire, impaired sexual functioning, and diminished satisfaction (Banaei et al., 2023; del Mar Sánchez-Fuentes et al., 2014). Loneliness also disrupts positive emotional cycles within couples, increasing vulnerability to negative affect, irritability, and avoidance, which further weaken the relational foundation needed for sexual well-being (Hamili et al., 2024; Miri & Najafi, 2017). Thus, the current findings corroborate previous work emphasizing loneliness as a powerful mediating factor in the relationship between emotional deficits and sexual dissatisfaction.

Moreover, the interconnectedness between communication, emotional intimacy, and sexual fulfillment reflected in the study echoes broader biopsychosocial models of sexuality. The interpersonal exchange model posits that mutual emotional responsiveness and attuned communication predict sexual satisfaction (Byers & Macneil, 2006). Emotional intelligence, emotional expression, and psychological well-being have similarly been shown to facilitate relational bonding, enhance sexual desire, and reduce conflict (Luis et al., 2022; Rao et al., 2024). Research also shows that women's sexual experiences are highly sensitive to relational contexts, emotional closeness, and partners' psychological traits (Khan, 2025; Meyers et al., 2022). The present findings reinforce this conceptualization by showing that traits influencing emotional processing—both deficits and strengths—shape the pathways through which sexual well-being develops in couples.

5. Conclusion

Overall, the study provides a robust empirical framework showing that autistic personality traits, alexithymia, and empathy in male partners significantly influence sexual well-being in women, and that loneliness serves as a meaningful explanatory bridge between these constructs. This integrative understanding expands current literature by linking interpersonal traits, emotional mechanisms, and sexual outcomes within a single predictive model. It also contributes to cultural contexts where emotional expression may be more restricted and sexual communication patterns vary, highlighting the universality of emotional processes in shaping intimate functioning.

6. Limitations and Suggestions

The study encountered several limitations. The sample consisted exclusively of married couples in academic institutions, which may limit generalizability to broader populations including non-student couples, individuals in different socioeconomic strata, or those in non-marital relationships. Self-report measures, while widely used and validated, are susceptible to social desirability bias, especially regarding sensitive topics such as sexual behavior and emotional functioning. Cultural norms related to modesty, gender roles, and emotional communication may also influence participants' responses. Additionally, the cross-sectional design prevents causal inference, making it impossible to determine whether emotional traits cause changes in sexual well-being or vice versa. Longitudinal or experimental designs would be needed to clarify directionality.

Future research should include more diverse populations, incorporating couples from different age groups, educational backgrounds, and cultural contexts to enhance external validity. Longitudinal studies examining how autistic traits, emotional processing, and loneliness evolve over time within relationships would offer deeper insights into causal pathways. Future investigations may also explore dyadic models that account for both partners' emotional profiles

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simultaneously. Incorporating physiological measures of emotional regulation or observational assessments of communication could further enrich understanding of the mechanisms influencing sexual well-being. Experimental or intervention studies targeting empathy-building, emotional expression, or loneliness reduction could evaluate the practical effectiveness of these approaches in improving sexual outcomes.

Practical applications of the findings suggest that couple-based interventions should prioritize emotional skill-building, including training in empathy, emotional expression, and recognition of emotional cues. Therapists may focus on reducing loneliness within relationships by promoting emotional availability, enhancing communication, and fostering shared meaning-making. Psychoeducation regarding the impact of autistic traits and alexithymia on intimacy could help couples reframe challenges and adopt adaptive strategies. Programs aimed at strengthening relational bonds and improving emotional connection may ultimately enhance sexual well-being and marital satisfaction.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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