



The Role of Family Communication Patterns and Internet Addiction in Trait Anxiety among Generation Z

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Abstract

The current study examined the role of Family Communication Patterns (Conversation and Conformity Orientation) and Internet Addiction in Trait Anxiety among adolescents. A sample of 406 adolescents (202 boys, 204 girls; aged 14–18 years) from urban Shimla, Himachal Pradesh, were assessed using the Revised Family Communication Patterns Instrument (Koerner & Fitzpatrick, 1990), Internet Addiction Scale (Young, 1998), and State-Trait Anxiety Inventory (Spielberger et al., 1964). Data were analysed using t-tests, correlation, and stepwise regression.

Findings revealed significant gender differences in Conversation Orientation whereas no significant gender differences were found in Conformity Orientation, Internet Addiction and Trait Anxiety among adolescents. The results also found significant negative correlation between Family communication patterns (conversation and conformity orientation) and Trait Anxiety among adolescents. Furthermore, Conversation Orientation significantly predicted Trait Anxiety among both genders, while Internet Addiction had a significant negative correlation with Trait Anxiety only among boys and predicted Trait Anxiety for boys. These variables exerted a negative influence on Trait Anxiety. The findings emphasise the importance of open family communication and suggest moderated internet use may reduce trait anxiety, especially among boys.

Keywords: Family Communication Patterns, Internet Addiction, Trait Anxiety, Adolescents



Adolescence is a dynamic phase of life, marked by energy, curiosity, and challenges. In India, adolescents make up a significant demographic, with 253 million individuals comprising 21 per cent of the nation's population (UNICEF, 2024). As the future drivers of social, political, and economic progress, their well-being is crucial for the nation's development.

Yet despite their potential, Generation Z adolescents today face a myriad of challenges that threaten their well-being. Mental health concerns, particularly anxiety has emerged as a significant issue among this demographic group (World Health Organisation, 2024). Rapid societal changes, intense academic competition, and exposure to digital environments contribute to heightened stress levels among Generation Z (Alhamed, 2023). Among these, trait anxiety characterised by a predisposition to perceive situations as threatening has become increasingly prevalent. This condition not only affects their emotional health but also impairs their academic performance, social interactions, and overall development (Macher et al., 2012).

Gender differences in Generation Z adolescents' trait anxiety have been the focus of several studies. Celikkaleli and Demir (2022) reported that trait anxiety was more prevalent among adolescent girls than boys. Similarly, a recent study by Kopcsó and Lang (2023) observed higher anxiety levels in girls. This is potentially influenced by socialisation practices that foster greater familial dependence in girls compared to boys.

It is further observed that adolescents' trait anxiety is influenced by various factors, one such crucial factor is family communication. The family communication patterns can be understood through two dimensions: **conversation orientation** and **conformity orientation** (Koerner & Fitzpatrick, 2002). Conversation orientation reflects the degree to which family members are encouraged to openly share and discuss a wide range of topics. Conformity orientation measures the extent to which family communication emphasizes uniformity in attitudes and beliefs. High conformity families prioritize obedience, harmony, and conflict avoidance, whereas low conformity families encourage individuality.

Research suggests that adolescent girls and boys experience different communication dynamics with their parents. It was observed that parents tended to communicate more openly with daughters while exhibiting greater protectiveness toward them compared to boys (McNaughton, 2000). This pattern reflects a broader trend in which gender shapes parental communication strategies.

Although studies specifically utilizing the Family Communication Patterns Scale are limited, other tools, such as the parenting style assessments, have been employed to explore these dynamics. For example Haghshenas, Fereidooni, and Ghazavi (2024) highlighted that adolescents' trait anxiety levels varied significantly by parenting style, with the highest anxiety reported among children of permissive parents and the lowest among those of authoritarian parents.

Furthermore, Granell et al. (2021) found that adolescents with unresponsive parents experienced higher anxiety levels compared to those with supportive and nurturing parents who set firm boundaries. Another study reported that open communication with parents reduced anxiety levels among adolescents (Novak et al., 2021). Huang (2023) further reinforced these findings by identifying a significant inverse relationship between effective family communication and anxiety among adolescents.



In addition to family communication, the rise of the internet has also significantly influenced adolescent well-being. The Internet has significantly impacted global communication, but excessive human-machine interaction has led to negative effects, such as internet addiction (IA). It is characterised by disruptive behaviours like excessive gaming, prolonged chatting, and risky online activities posing significant challenges. Studies have consistently found significant gender differences in internet addiction among adolescents (Kannan et al., 2019; Dhawan, Kang, and Sharma, 2021; Shan et al., 2021) reporting higher levels of internet addiction among boys compared to girls, emphasising the significant role gender plays in internet addiction among adolescents.

Research have also observed a link between internet addiction and trait anxiety. Gunaydin et al. (2021) revealed that neuroticism contributes to higher internet addiction scores among adolescents. Liu et al. (2023) further identified anxiety as a critical risk factor for internet addiction, highlighting a feedback loop where excessive internet use exacerbates anxiety, perpetuating dependence, and emotional distress.

Despite these insights, no study has yet explored how family communication patterns and Internet usage collectively influence adolescent trait anxiety. Research in India has predominantly focused on parenting styles, leaving a gap in understanding the impact of family communication on adolescents' psychological outcomes. Addressing this gap, the present study aims to examine the combined influence of family communication patterns and Internet addiction on adolescents' trait anxiety.

With these points in mind, the primary objectives of the present research work are as follows:

- (i) To measure and compare Family communication patterns (conversation and conformity orientation), Internet Addition and Trait Anxiety among Adolescent Girls and Boys.
- (ii) To examine the impact of Family Communication Patterns (conversation and conformity orientation) on Trait Anxiety among Adolescent girls and boys.
- (iii) To investigate the influence of Internet Addiction on the Trait Anxiety of Adolescent girls and boys.

In the present research the following hypotheses were proposed:

1. Internet Addiction will be significantly higher among Adolescent Boys as compared to Adolescent Girls.
2. Adolescent Girls will have significantly higher Trait Anxiety than Adolescent Boys.
3. There will be a significant negative correlation between Conversation Orientation and Trait Anxiety among Adolescent Boys
4. There will be a significant negative correlation between Conversation Orientation and Trait Anxiety among Adolescent Girls.
5. There will be a significant positive correlation between Conformity Orientation and Trait Anxiety among Adolescent Boys.
6. There will be a significant positive correlation between Conformity Orientation and Trait Anxiety among Adolescent Girls.
7. There will be a significant positive correlation between Internet Addiction and Trait Anxiety among Adolescent Boys.
8. There will be a significant positive correlation between Internet Addiction and Trait Anxiety among Adolescent Girls.



Method

Sample

In the present study, a stratified random sampling technique was employed to select 406 adolescents Pradesh (202 boys and 204 girls) from Shimla, the capital city of Himachal Pradesh.

Tools

Family communication patterns, Internet Addiction, Trait Anxiety, were measured by the following standardized tests:

1. Family Communication Patterns Scale-R

The Family Communication Patterns Scale (Fitzpatrick & Koerner, 2006) assesses family communication through two subscales: **Conversation Orientation** (15 items), which measures the frequency and openness of family interactions on various topics, and **Conformity Orientation** (11 items), which evaluates communication focused on uniformity of beliefs and conflict avoidance. Cronbach's alpha coefficients are 0.93 for Conversation Orientation and 0.89 for Conformity Orientation. The scale demonstrates construct validity of 0.7, with convergent and divergent validity values of 0.05. Responses are measured on a 7-point Likert scale, with higher scores in Conversation Orientation indicating more open communication, and higher scores in Conformity Orientation suggesting less flexibility in interactions.

2. Internet Addiction Test (IAT)

The Internet Addiction Test (Young, 1996) assesses the severity of compulsive Internet use through 20 items rated on a 6-point Likert scale. It demonstrates strong internal consistency ($\alpha = 0.93$) and a split-half reliability of 0.72. Concurrent validity ranges from 0.27 to 0.40, and its convergent validity with time spent online is 0.21. The total scores range from 0 to 100, with 20–49 indicating average use, 50–74 suggesting moderate addiction, and 75–100 reflecting severe dependence.

3. The State Trait Anxiety Inventory (STAI-T)

The State-Trait Anxiety Inventory (STAI-T) (Spielberger et al., 1983) measures trait anxiety using 20 items. It demonstrates strong internal consistency, with values ranging from 0.86 to 0.95, and test-retest reliability between 0.65 and 0.75 over a two-month period. The instrument is supported by robust construct and concurrent validity. Higher scores reflect greater levels of trait anxiety.

Techniques

To analyse the collected data from the adolescents the following statistical techniques were used:

1) Comparison of means(t-test)

t-test was conducted to see the significance of differences between adolescent boys and girls on two sub-variables of Family Communication Patterns (conversation and conformity orientation), Internet Addiction and Trait Anxiety.

2) Correlation Analysis

Pearson Correlation analysis was computed for two sub-variables of Family Communication Patterns (conversation and conformity orientation), and Internet Addiction with Trait Anxiety among adolescent girls and boys.

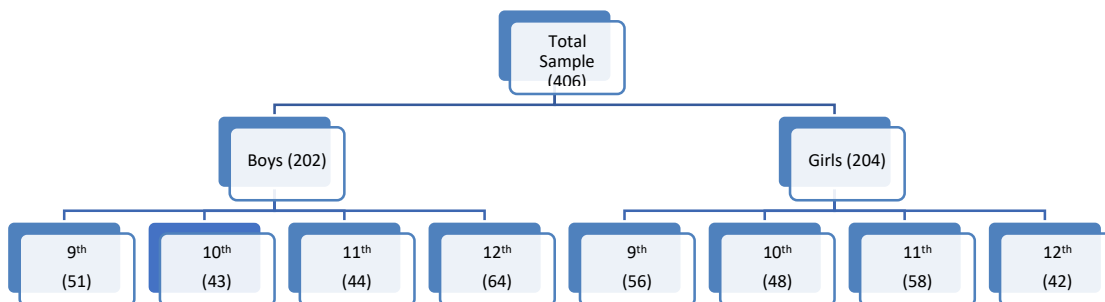
3) Step-wise Regression Analysis

Step-wise regression analysis was carried out to see predictors of Trait Anxiety separately among adolescent boys and girls. A comparative analysis was carried out for the predicted variables among male and female adolescents. The predicted variables were two sub-variables of Family Communication Patterns (conversation and conformity orientation) and Internet Addiction.

Procedure

The participants were students from classes 9th to 12th, aged 14–18 years, representing nine schools of Shimla. On average, 51 students per school contributed to the study, with 107 from the 9th standard, 91 from the 10th standard, 102 from the 11th standard, and 106 from the 12th standard. Data collection was conducted during regular school hours in the presence of class teachers to ensure a controlled environment.

Fig. 1: Schematic Representation illustrating the distribution of adolescents by gender and class classifications.



RESULTS AND DISCUSSION

TABLE I: Comparative Analysis of Adolescent Boys and Girls on Variables of Family Communication Patterns, Internet Addiction and Trait Anxiety

Sr. No.	Variables	Mean Boys (N=202)	Std. Dev.	Mean Girls (N=204)	Std. Dev.	t-ratio
A.	Family communication patterns					
1	Conversation orientation	3.83	.929	4.20	1.02	3.802* *
2	Conformity orientation	3.93	.908	4.11	1.11	1.819
B.	Internet addiction	47.07	17.35	44.95	17.24	1.234
C.	Trait Anxiety	50.96	7.71	50.01	8.86	1.142

****p<.01**

Table I indicates that adolescent girls (M=4.20) have scored significantly ($t=3.8$, $p<.01$) higher on the Conversation Orientation dimension as compared to adolescent boys (M=3.83). This suggests that adolescent girls are significantly more open to conversations with their family members than adolescent boys. The mean scores on both conversation and conformity orientation dimensions are on the higher side. This indicates that the family encourages open communication but at the same time also wants to maintain the hierarchy within the family

Numerous studies have shown that the way parents communicate with their children based on gender significantly influences how children interact with other family members (Marks, 2009; Bornstein, 2016). The observed differences in communication could be attributed to prescribed gender roles, where culture and society play a crucial role in shaping gender-based behaviours. According to Bandura (1977), children learn gender differences at an early age by observing the communication patterns in their family, eventually adopting behaviours that align with their gender. These patterns are further reinforced by social traditions, which influence self-expression within families. In particular, it is common for girls to be more expressive than boys, as girls tend to discuss their problems openly with family members, whereas boys may refrain from doing so, as it could be perceived as a sign of weakness.



It can also be observed from Table I that adolescent girls ($M=4.11$) have scored ($t=1.819$) and boys have scored ($M=3.93$). Hence, showing no significant gender differences ($t=1.81, n.s.$) in conformity orientation among adolescents. The results align with Kohli (2018), who found that parents offered equal love, care, and educational opportunities to both sons and daughters. Consequently, the degree of conformity does not differ nowadays between genders, as parents now provide similar environments, opportunities, and restrictions to both.

The results further revealed that adolescent girls' mean ($M=44.95$) scores and boys mean scores ($M=47.07$) did not reach the level of significance ($t=1.234, n.s.$). Thus, showing no significant gender differences between adolescent girls and boys in internet addiction. Hence, the hypothesis 1 stating that **“Internet Addiction will be significantly higher among Adolescent Boys as compared to Adolescent Girls”** was not proved.

The results are consistent with earlier studies by Brenner (1997), Young (1998), Khan et al. (2017), and Hassan et al. (2020), which also found no significant gender-related differences in internet addiction. These researches have also noted that adolescent girls are more likely to engage in social interactions online, and boys in online gaming, the overall level of internet use in this study was moderate for both genders. Given that both groups had comparable exposure to the internet for various purposes, this could have minimized the potential gender differences in addiction.

The results of the current study further noted that the mean scores of girls ($M=50.01$) on anxiety and boys' mean scores ($M=50.96$) were found to have no significant gender differences ($t=1.142, n.s.$) among adolescent girls and boys. The hypothesis 2 that **“Adolescent Girls will have significantly higher Trait Anxiety than Adolescent Boys”** was not upheld. Both genders scored high on trait anxiety. The sample may have experienced elevated trait anxiety due to academic pressure, societal expectations, and cultural attitudes toward mental health. Academic success, often tied to competitive exams, creates significant stress (Compas et al., 2001). Social media further exacerbates anxiety through comparisons to idealized online images (Primack et al., 2017). Cultural stigma around mental health in India often prevents adolescents from seeking help, as mental health issues like anxiety are frequently dismissed (Tamta, Joshi and Karn, 2024). Additionally, societal expectations, particularly related to gender roles and family traditions, increase pressure and anxiety (Arcand et al., 2020). Adolescents also struggle with balancing modern aspirations and traditional values, which can lead to identity conflicts and heightened anxiety (Branje et al., 2021). These combined factors significantly may have impacted the trait anxiety in adolescents.

TABLE II: Correlation of Family Communication Patterns, Internet Addiction with Trait Anxiety, Among Adolescent Boys

Sr. No.	Variables	Trait Anxiety
A.	Family Communication Patterns	
1.	Conversation Orientation	-.249**
2.	Conformity Orientation	-.193**
B.	Internet Addiction	-.248**

****p<.01**

Table II indicates that Conversation Orientation ($r = -.249$, $p < .01$) had a significant negative correlation with Trait Anxiety, which shows that the more open the family conversation lesser the Trait Anxiety among Adolescent Boys. Thus, the above results substantiate hypothesis 3 that “There will be a significant negative correlation between Conversation Orientation and Trait Anxiety among adolescent boys”.

TABLE III : Stepwise Multiple Regression Analysis of Family Communication Patterns (Conversation and Conformity Orientation) and Internet Addiction as Predictors of Trait Anxiety among Adolescent Boys

Sr No.	Independent Variables	r	β	T	R^2	R^2 Change	F-ratio (R^2 Change)
1.	Conversation Orientation	-.249**	-.197	-3.340**	.062	.062	13.20**
2	Internet Addiction	-.188**	-.195	-2.60**	.098	.035	7.77**

****p<.01**

Table III further revealed that conversation orientation ($\beta = -.197$ and $t = -3.340$, $p < .01$) has emerged to be the significant predictor of trait anxiety among adolescent boys. Conversation orientation accounted for 6 per cent ($F = 13.20$, $p < .01$) of the variance. Thus, lower trait anxiety was predicted by higher scores on Conversation Orientation.

Open family communication acts as a protective factor among adolescents at risk of anxiety disorders (Guilamo-Ramos et al., 2006). Many studies (McLeod, Wood, Weisz, 2007 and Yap et al., 2014) have found that parents who provide an atmosphere which is full of warmth and encourage their children to openly express their views showed an inverse relationship to the anxiety of adolescents.

Table II also suggests that there was a significant negative correlation between Conformity Orientation ($r = -.193$, $p < .01$) and Trait Anxiety among adolescent boys. This signifies that a family which focuses on the homogeneity in beliefs, attitudes, and values among its members was found to have lower anxiety. Therefore, hypothesis 5 that **“There will be a significant positive correlation between Conformity Orientation and Trait Anxiety among adolescent boys”** is not substantiated. The results also confirmed that, conformity orientation was not found to predict trait anxiety among adolescent boys.

The results regarding conformity orientation and its relation with trait anxiety are not in congruence with the past studies. The reason could be because the present study data belonged to consensual families where conformity orientation was perceived as being ‘warm’ in nature and it directly correlated with conversation orientation, showing family closeness, family satisfaction, cohesion, and adaptability which leads to lower level of anxiousness among adolescents (Reardon et al., 2017).

Further, Table II shows that there was a significant negative correlation between Internet Addiction and Trait Anxiety among adolescent boys. Hence hypothesis 7 **“There will be a significant positive correlation between Internet Addiction and Trait Anxiety among Adolescent Boys”** was not proved. Table III indicated another significant predictor of Trait anxiety among adolescent boys was Internet Addiction ($\beta = .195$ and $t = -2.60$, $p < .01$). Internet Addiction accounted for 4 per cent of the variance ($F = 7.77$, $p < .01$) in Trait Anxiety among adolescent boys. The two variables namely conversation orientation and internet addiction both variables accounted for 9 per cent of the variance among adolescent boys.

The results reveal that higher levels of Internet addiction were associated with lower levels of trait anxiety.

These results differ from those of Liu et al. (2019), YFanti et al., (2020), and Günaydın (2021), which indicated a significant positive correlation between internet addiction and anxiety among adolescents. The current study may have been influenced by situational factors, as the data were collected during partial lockdowns that confined adolescent boys to their homes. The internet might have assisted them in navigating this overwhelming phase of the COVID-19 pandemic, as it could have compensated for the lack of face-to-face communication, as noted by Tian et al. (2020).

Cultural and social norms also offer a compelling perspective. In Indian society, boys often face societal expectations to suppress emotional vulnerabilities and maintain a strong exterior. The internet might provide a private and nonjudgmental space for self-expression and stress relief,



thereby reducing trait anxiety. Online platforms, including gaming and social networking sites, may allow boys to engage in activities that are both enjoyable and stress-buffering (Taddi, 2024).

The study also revealed that adolescent boys scored higher on trait anxiety. Studies have shown that anxiety increases when individual experience uncertainty (Centinkaya et al., 2022; Soria et al., 2023). Adolescent boys were also found to be moderate users of the internet, unlike internet addiction, which is characterized by compulsive usage and negative emotional impacts. Internet addiction can exacerbate feelings of stress and anxiety, particularly when it interferes with real-life social interactions, physical activities, and sleep patterns. However, this was not the case in the present study, where moderate internet use did not show such negative effects. Instead, the controlled use of the internet seemed to offer a beneficial outlet for connection and coping, without contributing significantly to trait anxiety.

TABLE IV: Correlation of Family Communication Patterns, School Climate and Internet Addiction with Trait Anxiety Among Adolescent Girls

Sr. No.	Variables	Trait Anxiety
A.	Family Communication Patterns	
1.	Conversation orientation	-.366**
2.	Conformity orientation	-.333**
B.	Internet Addiction	-.032

****p<.01**

It is evident from Table IV that there is a significant and negative correlation between Conversation Orientation ($r = -.366$, $p < .01$) and Trait Anxiety, indicating that the more open the family conversation, the lesser the trait anxiety among adolescent girls. Thus, the above results substantiate hypothesis 4 that “There will be a significant negative correlation between Conversation Orientation and Trait Anxiety among Adolescent Girls”.

TABLE V: Stepwise Multiple Regression Analysis of Family Communication Patterns (Conversation and Conformity Orientation) and Internet Addiction as Predictors of Trait Anxiety among Adolescent Girls

Sr No	Variables	r	β	T	R ²	R ² Change	F-ratio (R ² Change)
1.	Conversation orientation	-.366**	-.366	-5.60**	.134	.134	31.37**

****p<.01**



Table V shows that conversation orientation ($\beta = -.366$ and $t = -5.60$, $p < .01$) is a significant predictor of trait anxiety among adolescent girls. Thus, lower Anxiety was predicted by higher scores on Conversation Orientation, which accounted for 13 per cent of the variance ($F = 31.37$, $p < .01$) among adolescent girls.

The result of the present study was further supported by Moore (2009); Wei and Kendall (2014), indicated that openness in family communication and parental warmth are important factors in lowering the trait anxiety in adolescent girls. It is because that Conversation-Oriented families provide an atmosphere for their children to openly share their opinions and express their views on various topics which eventually lower adolescents' anxiety (McLeod, Wood, and Weisz, 2007).

It has been observed that when a child perceives higher acceptance and affection from parents, they showed less anxiety. Hence, opportunity to express and liberty to discuss various issues was found to negatively impact the anxiety of adolescents (Wei and Kendall, 2014; Nozadi and Tavakoli, 2015).

Table IV further indicated a significant negative correlation between Conformity Orientation ($r = -.264$, $p < .01$) and Trait Anxiety, indicating that adolescent girls belonging to families which place importance on homogeneity of attitudes and values tended to have lower Trait Anxiety. Consequently, Hypothesis 6, which stated that **“There will be a significant positive correlation between Conformity Orientation and Trait Anxiety among Adolescent Girls,”** was not supported. Furthermore, Table IV showed that Conformity Orientation was not found to predict Trait Anxiety among adolescent girls. These findings differ from previous studies, which may be attributed to cultural differences. Most prior researches were conducted in Western cultures, where conformity in family communication may be perceived as restricting freedom of expression. On the other hand, Indian culture was found to promote family cohesion by showing interdependence among its family members and hence was found to decrease anxiety among adolescents (Khambaty and Parikh, 2017), therefore showing a significant negative correlation between conformity orientation and trait anxiety among adolescent girls.

Furthermore, results indicated that there was no significant correlation between Internet Addiction and Trait Anxiety among adolescent girls. The results demonstrate that Internet Addiction did not influence the Trait Anxiety of adolescent girls. Hence, Hypothesis 8, which stated that **“There will be a significant positive correlation between Internet Addiction and Trait Anxiety among Adolescent Girls,”** was not supported. The study also revealed that Internet Addiction did not predict Trait Anxiety, confirming its lack of influence on the Trait Anxiety of adolescent girls.

The outcomes of the current study diverge from previous research, which has consistently found a significant positive correlation between internet addiction and anxiety (Goel et al., 2013; Gholamian et al., 2017; Kavitha & Vijila, 2019). One possible explanation for these inconsistent results is the unique role the internet may have played as an emotional outlet for adolescent girls during the pandemic. In this study, the participants were moderate internet users with high trait anxiety, suggesting that their internet usage may have facilitated emotional expression and connection, rather than contributing to internet addiction. In other words, the internet might have



provided an avenue for virtual socialization during the lockdown which, as noted by Magson et al. (2021), which could have helped adolescent girls to mitigate the feelings of anxiety, rather than exacerbating it.

Conclusion

The uniqueness of the study lies in its focus on family communication patterns during the lockdown, a rare period when families were confined under one roof for an extended time which was not possible under normal circumstances. In everyday life, families are often dispersed due to work, school, and other commitments, making it difficult to capture the full dynamics of their interactions. This extraordinary context provided a unique opportunity to explore how these communication dynamics influenced adolescents' mental health. By studying this relationship in such an unprecedented situation, the research offers valuable insights into how family interactions can serve as protective factors for adolescent well-being under stressful and confined conditions.

Hence, the present study highlights that improving family communication through encouraging open and supportive dialogue can be a critical intervention in reducing adolescent trait anxiety. Furthermore, the study reveals the nuanced role of internet use, suggesting that moderate engagement with online resources can provide emotional support, while excessive or passive use might not offer the same benefits. Adolescents, especially during critical developmental stages, need to feel valued and supported by their families, as this sense of emotional security can significantly influence their mental health outcomes in adolescence. The implications of these findings suggest that a combination of open family communication and a balanced approach to technology can foster healthy emotional and social development in adolescents.

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