Correlates of relationship issues among youth: Findings from a large scale youth mental health promotion program in India

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Abstract
Background: Relationships and mental health have a bidirectional effect. The effect of relationships on mental health is stronger than vice versa. We analyzed two-year case records of 8595 beneficiaries aged 15-35 years attending youth guidance centres (Yuva Spandana Kendras) in Karnataka, India to understand factors affecting relationship issues.
Methods: Multivariate logistic regression was performed with any beneficiary reporting having a relationship issue as outcome.
Results: Occupation, marital status, health and lifestyle issues, personality issues, safety issues, gender, sex, & sexuality issues, suicidality, alcohol, and different emotions experienced, had significant association with relationship issues. Investing in health promotion interventions focusing on these precursors of relationship issues amongst youth seems strategic.
Conclusion: Our findings have implications for other states in India and other low-middle-income countries like India.

Background
Relationship is fundamental for a healthy and satisfactory life. Relationships affect mental health and wellbeing. Relationships start developing since the time of infancy. However, it assumes importance and maturity during adolescence and youth. As psychosocial and cognitive aspects develop, relationships tend to shape and attain maturity(1). Both relationships and mental health have a bidirectional effect with each other. However, it is known that the effect of relationships on mental health is stronger than vice versa(2).
Youth is a formative phase. It is a transition period from childhood to adulthood. Relationships during youth are formative of the kind of relationships that emerge during adulthood. It can be relationships with parents, peers, romantic relationships, virtual relationships, societal relationships, intergenerational relationships etc. Half of all health conditions also begin during youth. Behaviour practiced during youth/adolescence like eating, physical activity, habits, relationships, other lifestyles carry their effect into adulthood(3). India today, is home for largest youth population in the world. About 30% of India’s population comprise of youth(4). Considering this magnitude, ensuring their
overall health is imperative to cash in on the demographic dividend of having a young productive population.(5). Further, period of youth and adolescence are largely disease-free compared to childhood and adulthood.

Adolescence and youth are considered a period when health of individual is at its peak. Thus, maintaining their prime health or improving their existing health through health promotion strategies tends to yield better results than a disease focused strategy. To cater to the health promotion needs of Youth of the state of Karnataka in India, the Department of Youth Empowerment and Sports, Government of Karnataka along with Department of Epidemiology, Centre for Public Health, NIMHANS have developed and implementing the program “YUVA SPANDANA” since 2015(6). Yuva Spandana (meaning responding to youth) is a unique first-of-its-kind youth mental health program in Karnataka, a state in southern India. This is a Karnataka state youth policy initiative where Youth named Yuva Samalochakas (meaning youth counselors) and Yuva Parivarthakas (meaning change agents of youth) provide guidance services through guidance centers named Yuva Spandana Kendras (meaning youth response centers). These centers are situated in district stadiums across 30 districts of Karnataka. This program focuses on Youth aged 15–35 years. The program provides guidance services for six major issues namely, education and academic issues, Safety issues, Health and Lifestyle issues, Personality Development issues, Relationship Issues and Gender, Sex and Sexuality issues. All these are considered risk factors to develop mental health problems. Understanding the factors affecting these factors will provide important inputs on the precursors of these risk factors and eventually reduce the occurrence of mental health problems. This will help in looking upstream, by intervening at the level of these factors, thereby reducing mental health problems in future.

The prevalence of mental health problems identified amongst youth in India is considerable. Recently conducted National Mental Health Survey (NMHS) revealed that 7.9 per cent of Indians aged 18–29 years suffer from some form of mental morbidity (7, 8).This can affect their wellbeing and mental health as adults. According to the NMHS of India, prevalence of common mental disorders like anxiety and depression and substance use is the least among those aged 18–29 years compared to older individuals(7). However, the disease process is known to begin during adolescence and Youth(9). The
risk factors of mental health problems like substance use, relationship issues, education and academic issues mostly begin during youth (9–11). The effect of substance use, education and academic performance and career on mental health problems are well understood (10, 11). The factors affecting these have also been understood. There are studies looking at the effect of relationships on mental health (12, 13). However, studies understanding factors affecting relationships among youth in large community settings and their effects on mental health are minimal. Most studies focus on marital/romantic relationships (12) or peer relationships (13). There are other relationships such as virtual relationships like social media interactions, professional relationships, relationships with family including parents and intergenerational relationships. Understanding relationship issues and learning to cope with it early during youth will go a long way in reducing mental health problems over time. Data collected under the program Yuva Spandana provides this unique opportunity of looking upstream and understanding factors affecting relationship issues among youth. This study looks at factors associated with relationship issues among youth beneficiaries attending Yuva Spandana Kendras in Karnataka.

Methods
We analyzed case records of beneficiaries who attended Yuva Spandana Kendras in Karnataka between 1st January 2017 and 31st December 2019 for this study. Beneficiaries registration and first visit details during registration was considered for this analysis. Beneficiary registration details include basic socio-demographic details, centre information, address, age, gender, level of education, marital status, occupation, hobbies and socio demographic details of significant others. Further, the registration details included beneficiary's habit of smoking, drinking and consumption of drugs. The visit details include, issues which the beneficiaries report and their perceived relationship with their family members, parents, friends and neighbours. In addition, visit details include a set of 18 “yes/no” questions related to emotions or feeling, which they might have experienced and ways of coping. These questions were related to feeling depressed, anxious, lonely, tired or helpless, excessively worried, loss of interest in work, ability to make decisions, forgetfulness, concentration related problems, suicidal ideation, guilt, along with information on their awareness of their
parents/friends attempting suicide.

All beneficiaries aged between 15–35 years with both registration and first visit details were considered for the study (Fig.I). There were 9954 beneficiaries who were registered during the study period. Out of this, there were 8799 beneficiaries aged between 15–35 years and 8733 beneficiaries had both registration and visit forms. There were 138 beneficiaries who were registered twice. They were identified by their name, phone number and address. Finally, there were 8595 beneficiaries were aged 15–35 years who were included for analysis.

Univariate and multivariate logistic regression analysis was performed with any beneficiary reporting having a relationship issue as the outcome. A conceptual framework was developed considering different hypothesized variable within the beneficiary registration and visit forms as exposure (Fig.II). There are different factors which are hypothesized to affect youth with relationship issues (Fig II).

Socio-demographic characteristics of the beneficiary, different emotions they face, and other types of issues being reported besides relationship issue are hypothesized to be associated with relationship issues among youth attending Yuva Spandana Kendras. In addition, substance use, types of other issues reported by the beneficiary and suicidality might also affect relationship issues. However, suicidality and substance use can also have a bidirectional effect on relationship issues.

**Statistical Analysis**

We performed univariate and multivariate binary logistic regression analysis with self-report of having a relationship issue as the outcome. All variables in the conceptual framework were hypothesized as exposure variable (Fig II). All hypothesized exposure variables significantly associated with the outcome at 10% level (p < 0.10) in univariate analysis were considered eligible to be included into the multivariate model. These variables were included into the multivariate model one after the other using a forward stepping process. Each variable was retained in the model when it was significant at 5% (p < 0.05) level. The significance of including a variable into the model was tested using likelihood ratio test comparing the previous model without that variable. The goodness of fit for the final multivariate model was assessed using Hosmer-Lemeshow test for goodness of fit and ROC curve was drawn to check the discrimination ability of the final multivariate logistic regression model.
All the descriptive analysis was performed using Microsoft Excel 2007. Logistic regression analysis was performed using Strata 12.0 software for windows.

Results:
There were 8595 beneficiaries visiting Yuva Spandana Kendras in Karnataka during the study period. Almost 2/3 of the beneficiaries were in the aged 15–20 years (62.31%) and from rural areas (69.04%). Majority of the beneficiaries were females, students and completed more than 10 years of schooling. Almost 90.6% of them were unmarried. Most beneficiaries who had relationship issues were aged between 15–20 years, males, rural, students and unmarried. Almost all the socio-demographic characteristics of the beneficiaries were associated with having relationship issues except gender in univariate analysis (Table I).

Majority of the beneficiaries who reported relationship issues reported issue with their parents (73%) followed by issues with their grandparents (intergenerational) and marital/romantic relationships (20.1%). Around 14% beneficiaries who reported relationship issues had issue with communication in a relationship (Fig III)

All the 18 variables on emotions experienced by the beneficiaries were found to be significantly (< 0.001) associated with relationship issues (Table II).

All issues other than education and academic issues and consuming drugs were significantly (< 0.001) associated with relationship issues. More than 70% of the beneficiaries who had safety (72.48%) or gender, sex and sexuality issues (70.37%) reported having relationship issues. Half of the beneficiaries who reported having attempted a suicide, reported to have relationship issues. Three-fourths of the beneficiaries who consumed alcohol reported having a relationship issue (Table III).

Multivariate analysis revealed occupation, marital status, beneficiaries who reported having health and lifestyle issues, having personality issues, having safety issues and having gender, sex and sexuality issues was associated with increased odds of having relationship issues. In addition, beneficiaries who experienced emotions of feeling anxious; feeling unable to trust anyone; suicidal ideation, being aware of any member of family committing suicide, and those who ever attempted suicide were at higher risk of having relationship issues. Beneficiaries who consumed alcohol were
associated with increased odds of having relationship issues. Beneficiaries who had forgetfulness and felt worthless had reduced risk of having relationship issues (Table IV).

Being a student was associated with 1½ times increased risk of having relationship issues compared to unemployed beneficiaries attending Yuva Spandana Kendras (AOR_{students} = 1.49; 95% CI = 1.18–1.89). Compared to unemployed beneficiaries salaried individuals or those doing business had 3 times higher risk of having relationship issues (AOR_{salaried/business} = 3.04; 95% CI = 2.10–4.40) and beneficiaries who were neither students nor salaried/business had 1.72 times higher risk of having relationship issues (OR_{others} = 1.72; 95% CI = 1.22–2.44). The beneficiaries who were married had 42% higher risk of having relationship issues compared to unmarried beneficiaries (AOR_{others} = 1.42; 95% CI = 1.06–1.90). Similarly, beneficiaries who were neither married nor unmarried had 3.4 times higher odds of having relationship issues (AOR_{others} = 3.44; 95% CI = 1.45–8.15). The beneficiaries with health and lifestyle issues (AOR_{having health and lifestyle issue} = 3.61; 95% CI = 3.05–4.27), personality issues (AOR_{having self–development issue} = 2.88; 95% CI = 2.43–3.41) and gender, sex and sexuality issues (AOR_{having gender, sex and sexuality issue} = 3.10; 95% CI = 1.93–4.98) had almost 3 times higher risk of having relationship issues compared to those beneficiaries without these issues. Beneficiaries having safety issues had 6 times higher risk of having relationship issue (AOR_{having safety issues} = 6.28; 95% CI = 5.01–7.87). Feeling anxious was associated with twice the higher odds of having relationship issues among beneficiaries attending Yuva Spandana Kendras (AOR_{feeling anxious} = 2.09; 95% CI = 1.74–2.51).

Beneficiaries who reported of being unable to trust anyone had 1.5 times higher odds of having relationship issues (AOR_{I feel like I am unable to trust anyone} = 1.51; 95% CI = 1.05–2.18). The beneficiaries with suicidal ideation had 3 times odds of having relationship issues (AOR_{feeling to committing suicide} = 3.50; 95% CI = 1.98–6.18). Interestingly, the beneficiaries who reported having forgetfulness had 46% reduced risk of having relationship issues (AOR_{forgot things that just happened} = 0.54; 95% CI = 0.36–0.79). Similarly, beneficiaries who felt being worthless had 63% reduced risk of having relationship issues (AOR_{feeling worthless} = 0.37; 95% CI = 0.26–0.53). The beneficiaries who were aware
of any family member attempting suicide were at 1.4 times increased risk of having relationship issues ($AOR_{\text{family}} = 1.42; 95\%CI = 1.00-2.00$), while beneficiaries who had ever attempted suicide had twice the higher risk of having relationship issues ($AOR_{\text{self}} = 1.82; 95\%CI = 1.17-2.85$) compared to those who had never attempted suicide. The beneficiary who had habit of drinking alcohol had 5 times higher odds of having relationship issues among beneficiaries attending Yuva Spandana Kendras ($AOR_{\text{drinking}} = 5.43; 95\%CI = 3.92-7.41$) compared to beneficiaries who did not drink alcohol.

Discussion
This study on understanding factors associated with relationship issues among beneficiaries aged 15 to 35 years attending guidance centers (Yuva Spandana Kendras) throughout the state of Karnataka revealed occupation, marital status, having health and lifestyle issues, personality issues, safety issues, gender, sex, & sexuality issues, suicidality, alcohol consumption, and different emotions experienced (feeling anxious, inability to trust anyone, forgetfulness, worthlessness, and suicidal ideations) as significant correlates for having relationship issues. All the factors were associated with increased risk of relationship issues. Forgetfulness and feeling worthless were associated with reduced risk of having relationship issues. The study results are similar in terms of alcohol consumption and suicidality as risk factors for relationship issues (14, 15). Studies among adolescents and adults have revealed that depression, depression among family members, and anxiety are risk factors for relationship issues (16). Similarly, feeling anxious, which can be considered as a risk factor / precursor for anxiety, and awareness of a member of family ever attempting suicide are shown to be risk factors for relationship issues in this study. Yuva Spandana being a mental health promotion programme, focus is more on data related to potential risk factors (like feeling anxious) for mental health problems rather than diagnosing mental health problems (like generalized anxiety disorder).

Depression is a known risk factor for relationship issues(17). Three questions which are considered as core symptoms to diagnose depression namely feel depressed, not interested in doing activities, feeling tired or helplessness (18) were considered as potential hypothesized exposures. However, these were not associated with risk of having relationship issues in multivariate analysis. This might
be due to the bidirectional association of depression and relationship issues which needs further evaluation.

Interestingly, forgetfulness and worthlessness are found to prevent relationship issues in this study. It is hard to explain such an association considering the complexity of relationship issues among the young. Search words like mental health and relationship, mental health problem and relationship, forgetfulness and relationship, forgetfulness and depression, forgetfulness and parental relationship, forgetfulness and suicide, worthlessness and relationship, worthlessness and depression, worthlessness and parental relationship didn’t elicit any relevant literature supporting/refuting this observation.

Beneficiaries who reported having health and lifestyle issues, gender, sex and sexuality issues, safety and personality issues were significantly at higher risk of reporting relationship issues. Those with safety issues had the highest risk of having relationship issues (AOR = 6.28) followed by health and lifestyle issue (AOR = 3.61), gender, sex and sexuality issues (AOR = 3.10) and personality issues (AOR = 2.88). It is likely that beneficiaries with safety issue tend to avoid interaction with people or they might lack trust among their relationship which might make them report relationship issues. The duration, intensity and type of issues along with utilizing in-depth interviews or other qualitative techniques would throw more light on this complex association. Information on duration of emotional experiences and amount of alcohol consumed would have added more information and understanding of factors affecting relationship issues. However, this study being done on clinic data of beneficiaries receiving services under a health promotion program, this data was not collected during routine guidance sessions.

To our knowledge, this is the first study looking at risk factors for relationship issues utilizing data from a large scale health promotion intervention amongst youth in a state in India. The large sample size of 8595 beneficiaries is strength along with a goodness of fit of 73% and area under curve of 86%. This study reveals about 14 factors affecting relationship issue, which can in turn impact future overall and psychological wellbeing amongst youth in Karnataka. The study is conducted amongst youth attending guidance centers within Karnataka. Study subjects are mostly rural, aged 15–20
years, students and unmarried youth. This is due to the fact that sensitization programs on Yuva Spandana is conducted mostly among students (78.1%) (data not shown). The results of the study can be fairly generalized to this group since three-fourths of the youth in Karnataka are studying in colleges (19). Given the nature of potential exposures considered in this study, large sample size across the state of Karnataka and lack of understanding of relationship issues in this population, the results of this study assume importance. Although the data utilized for the study is similar to clinic data or routine programmatic data. Under Yuva Spandana, data is collected on a standardized real-time digital platform by trained individuals (Yuva Samalochakas). The data is regularly monitored and checked for quality on a weekly basis. In addition, the registration and visit forms were developed based on stakeholder and expert consultation through an iterative process. Thus, the quality of collected data can be considered reliable and valid.

Certain limitations of the study need specific mention. Firstly, the temporality of association between the assessed factors and relationship issues cannot be determined due to the cross-sectional nature of data collected. Longitudinal assessment of these factors will throw more light on the temporality; Follow up data of some of these beneficiaries provide an opportunity for future analyses. Secondly, the beneficiaries attending Yuva Spandana Kendras are mobilized through sensitization programs conducted in the community. There is a possibility of healthy worker effect (20), with youth who find themselves healthy, are likely to attend Yuva Spandana Kendras, rather than those who do not consider themselves healthy. This is unlikely to change the results of the study. In fact, it is likely to strengthen the observed association when such effect is negated. Finally, there is a possibility of social desirability for responses to sensitive questions like self-report of different issues, suicidality and emotional experiences of beneficiaries. This is likely to be equal among both outcome groups. In this scenario of non-differential misclassification, the observed odds ratios are likely to be stronger in nature compared to the ones obtained in the study.

**Conclusion**

In conclusion, this study is an effort to understand factors affecting relationship issues. These factors are known precursors for mental health problems. Interventions aimed at reducing prevalence of
these risk factors of mental illness are essential. This will likely reduce mental health problems in any community. Youth form one-third of the demographic dividend in India (21). Youth is considered formative in shaping up adult mental health. Thus, investing in mental health promotion interventions focusing on these precursors of mental illness amongst youth seems strategic. Yuva Spandana is one such investment on youth health and development in Karnataka and India. Our findings also have implications for other states in India as well as other LMICs like India.

Declarations

Ethic and Consent to Participate:

Appropriate Ethical approval for the study was obtained from the Institute Ethics Committee at NIMHANS, Bengaluru vide letter No.NIMH/DO/ETHICS COMMITTEE MEETING/2018, Dated 10/01/2019. Written informed consent was obtained from all clients attending Yuva Spandana Kendras. For those clients below 16 years, parent/guardian consent was obtained.

Consent for Publication: Obtained appropriately

Availability Data and Materials:

The datasets during and/or analyzed during current study available from the corresponding author on reasonable request.

Completing Interests: None

Funding: None

Author’s contributions:

PBS and KG conceptualized the study and involved in every step in preparing the manuscript. SGP, MA & SVR. Reviewed the manuscript and collected the data. LG, JMK, SLS, MSR, SK, GG guided entire work.

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Table I: Socio-demographic characteristics and self-report of relationship issue among beneficiaries attending Yuva Spandana Kendras 2017-2019 in Karnataka (N=8595).

| Variables | Relationship Issue | Total n (%) | OR(CI)* | p value (df) | ρ |
|-----------|--------------------|-------------|---------|--------------|---|
|           | Present | Absent | Present | Absent |                  |          |
| Age in completed years | | | | | | |
| 15-20 | 642 | 4714 | 5356 | 2036 | 1.06-1.44 | <0.001 |
| 21-25 | 274 | 1629 | 1903 | 2014 | 1.47-2.13 | <0.001 |
| 26-30 | 171 | 710 | 881 | 10.25 | 1.96-3.08 | <0.001 |
| 51-35 | 114 | 341 | 455 | 5.29 | 3.08-5.02 | <0.001 |
| Gender | Female | 511 | 3326 | 3837 | 0.98-1.25 | 0.116 |
| Male | 690 | 4068 | 4758 | 55.35 | 1.10-1.44 | 0.001 |
| Locality | Urban | 323 | 2338 | 2661 | 1.10-1.44 | 0.001 |
| Rural | 878 | 5056 | 5934 | 69.04 | 1.10-1.44 | 0.001 |
| Years of schooling | 0-4 years | 88 | 141 | 229 | 2.66 | 4.53 |
| 5-7 years | 76 | 314 | 390 | 4.53 | 0.7-1.44 | 0.001 |
| 8-10 years | 155 | 1220 | 1375 | 16 | 0.27-0.56 | <0.001 |
| >10 years | 882 | 5719 | 6601 | 76.8 | 0.19-0.33 | <0.001 |
| Occupation | Unemployed | 169 | 1391 | 1560 | 1.95 | 3.14 |
| Students | 772 | 5378 | 6150 | 1.22 | 1.41 |
| Business/Salaried | 100 | 218 | 318 | 2.84 | 2.54-4.12 | 0.001 |
| Others | 160 | 407 | 567 | 6.59 | 0.28 |
| Marital Status | Unmarried | 980 | 6811 | 7791 | 3.69-5.02 | <0.001 |
| Married | 211 | 555 | 766 | 8.91 | 1.20-5.13 | <0.001 |
| Others | 10 | 28 | 38 | 0.44 | 0.04 |
| TOTAL | 1201 | 7394 | 8595 | 100.00 | 1.00-1.00 |

*Odds ratio with 95% Confidence Interval. ρ p value for Pearson chi-square test for independence with appropriate degree of freedom (df)
Table II: Distribution of emotions experienced and relationship issues among beneficiaries attending Yuva Spandana Kendra 2017-2019 in Karnataka. (N=8595)

| Variables                                      | Relationship Issues | Total      | OR(CI)* |
|------------------------------------------------|---------------------|------------|---------|
|                                                | Present             | Absent     | N=8595  |
|                                                | n   | %   | N   | %   | n   | %   | OR   | CI       |
| Feel anxious                                   | 522 | 27.38 | 1384 | 72.61 | 1906 | 22.17 | 3.34 | 2.94-3.79 |
| Feel depressed                                 | 230 | 34.12 | 444  | 65.87 | 674  | 7.84  | 3.71 | 3.12-4.41 |
| Not interested to do any work                   | 203 | 29.16 | 493  | 70.83 | 696  | 8.09  | 2.85 | 2.39-3.40 |
| Feel tired or helpless                          | 205 | 27.22 | 548  | 72.77 | 753  | 8.76  | 2.57 | 2.16-3.06 |
| Worrying about problems                         | 189 | 26.58 | 522  | 73.41 | 711  | 8.27  | 2.46 | 2.06-2.94 |
| Feel like lost everything in life due to their problems | 139 | 34.57 | 263  | 65.42 | 402  | 4.67  | 3.55 | 2.86-4.40 |
| Feel incapable of making decisions or solve problems | 226 | 30   | 528  | 70    | 754  | 8.77  | 3.01 | 2.54-3.57 |
| Feel lonely                                     | 163 | 28.34 | 412  | 71.65 | 575  | 6.68  | 2.66 | 2.19-3.23 |
| Unable to trust anyone                          | 111 | 40.65 | 162  | 59.34 | 273  | 3.17  | 4.55 | 3.54-5.04 |
| Forgetfulness                                   | 85  | 27.33 | 226  | 72.66 | 311  | 3.61  | 2.42 | 1.87-3.12 |
| Difficulty in concentration                     | 111 | 37   | 189  | 63    | 300  | 3.49  | 3.88 | 3.05-4.95 |
| Feel like running away from everyone            | 83  | 49.7 | 84   | 50.29 | 167  | 1.94  | 6.46 | 4.74-8.81 |
| Feel like committing suicide                    | 79  | 68.69 | 36   | 31.30 | 115  | 1.33  | 14.39| 9.66-21.45 |
| Feel like it would have been good to have died  | 64  | 56.14 | 50   | 43.85 | 114  | 1.32  | 8.27 | 5.68-12.03 |
| Angry with people around                        | 129 | 35.34 | 236  | 64.65 | 365  | 4.24  | 3.65 | 2.92-4.57 |
| Feel like failed in managing responsibilities    | 85  | 33   | 172  | 67    | 257  | 2.99  | 3.20 | 2.45-4.18 |
| Feel guilty                                     | 124 | 34.44 | 236  | 65.55 | 360  | 4.18  | 3.49 | 2.78-4.38 |
| Feel worthless                                  | 84  | 24.13 | 264  | 75.86 | 348  | 4.04  | 2.03 | 1.58-4.18 |

*Odds Ratio with 95% Confidence Interval. All p-values for wald test are significant at p<0.001

Table III: Distribution of other risk factors in relationship issues among beneficiaries attending Yuva Spandana Kendras 2017-2019 in Karnataka (N=8595).
| Variables                                           | Relationship Issues | Total | OR(CI)* | P value(df)$ |
|-----------------------------------------------------|---------------------|-------|---------|--------------|
|                                                     | Present n | %     | Present n | %     | Present n | %     | Present n | %     | 95% CI     | P value(df)   |
| Types of issues reported                            | Present n | 858   | 836      | 548      | 114    | 37.33  | 14.32    | 70.37    | 37.33       | <0.001        |
| Health and lifestyle issues                         |         |       |          |          |        |        |          |          |            |              |
| Personality issues                                   |         |       |          |          |        |        |          |          |            |              |
| Education and academic issues                       |         |       |          |          |        |        |          |          |            |              |
| Safety issues                                       |         |       |          |          |        |        |          |          |            |              |
| Gender, sex and sexuality issues                    |         |       |          |          |        |        |          |          |            |              |
| Suicidal attempts among Family and Friends          | Present n | 97    | 86       | 97       | 125   | 22.04  | 18.37    | 51.05    | 51.05       | <0.001 $\times$ 0.005 |
| Self                                                |         |       |          |          |        |        |          |          |            |              |
| Substance Use                                       | Present n | 48    | 50       | 305      | 116  | 28.57  | 26.04    | 77.02    | 28.57       | <0.001 $\times$ 0.001 |
| Tobacco chewing                                     |         |       |          |          |        |        |          |          |            |              |
| Tobacco smoking                                     |         |       |          |          |        |        |          |          |            |              |
| Drinking Drugs                                      |         |       |          |          |        |        |          |          |            |              |

*Odds Ratio with 95% Confidence Interval (CI); $p$ value for Pearson chi-square test for independence with appropriate degree of freedom (df)

Table IV: Multivariate logistic regression model for factors affecting relationship issues among beneficiaries attending Yuva Spandana Kendras in Karnataka 2017-2019 (N=8595)
| Variables                        | Adjusted Odds Ratio(CI)<sup>1</sup> | p value |
|---------------------------------|-------------------------------------|---------|
| **Occupation**                  |                                     |         |
| Unemployed                      | 1.49                                | 0.001   |
| Students                        | 3.04                                | <0.001  |
| Business/salaried               | 1.72                                | 0.002   |
| Others                          |                                     |         |
| **Marital status**              |                                     |         |
| Unmarried                       | 1.42                                | 0.019   |
| Married                         | 3.44                                | 0.005   |
| Others                          |                                     |         |
| **Type of issue reported**      |                                     |         |
| Health and lifestyle issues     | 3.61                                | <0.001  |
| Personality issues              | 2.88                                | <0.001  |
| Safety issues                   | 6.28                                | <0.001  |
| Gender, sex and sexuality issues| 3.10                                | <0.001  |
| **Emotions experienced**        |                                     |         |
| Feel anxious                    | 2.09                                | <0.001  |
| Unable to trust anyone          | 1.51                                | 0.028   |
| Forgetfulness                   | 0.54                                | 0.002   |
| Feel like committing suicide    | 3.50                                | <0.001  |
| Feel worthless                  | 0.37                                | <0.001  |
| **Suicidality**                 |                                     |         |
| Member of family ever attempted suicide | 1.42 | 0.049 |
| Beneficiary ever attempted suicide | 1.82 | 0.008 |
| **Substance use**               |                                     |         |
| Alcohol                         | 5.43                                | <0.001  |

<sup>1</sup>95% confidence interval; Odds ratio for each variable is adjusted for all other variables in the table.

Hosmer-Lemeshow test for goodness of fit – p=0.7301; Area under the curve = 0.86

Figures
Figure 1

Process of selection of study subjects
Conceptual framework of hypothesized exposure variables affecting relationship issues among beneficiaries attending Yuva Spandana Kendras in Karnataka – 2017- to 2019

Figure 2

Emotions experienced
- Feeling anxious
- Feeling Depressed
- Feeling Tired/ helpless
- Worrying about their problem
- Problem in decision making
- Feeling Lonely
- Unable to Trust anyone
- Unable to concentrate
- Feeling like committing suicide
- Angry with people around
- Management issues
- Guilty
- Worthlessness

Suicidal attempt among
- Family members
- Friends
- Self

Socio-demographic details
- Age
- Gender
- Level of Education
- Locality
- Occupation
- Marital Status

Substance Use
- Tobacco Smoking
- Tobacco Chewing
- Alcohol
- Drugs

Type of issue reported
- Health and lifestyle
- Safety issue
- Personality issue
- Education and academic issue
- Gender, sex and sexuality

Relationship Issue
Figure 3

Distribution of beneficiaries with relationship issues – Yuva Spandana Jan 2017 to Dec 2019

(N=1201)