Original Articles

Correlates of loneliness and dissatisfaction following SARS pandemic lockdown: Child and parent perspective

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ABSTRACT

Background. Studying loneliness among children is important because it causes much social pain and is considered to be a risk factor for many mental and physical problems.

Methods. We did an online survey between July and September 2020 among students and their parents from a cluster of government and private schools chosen from north, south, east and west of Chandigarh. The survey consisted of child and parent versions of the Loneliness and Social Dissatisfaction Questionnaire, Parent–Child Relationship (PCR) Questionnaire and Conflict Behaviour Questionnaire SF. Parental distress was assessed using the Depression, Anxiety and Stress Scale-21.

Results. The majority of children and parent participants reported high loneliness and dissatisfaction among children. A significant positive association was found between children and parent reported loneliness and dissatisfaction, and between child reported PCR and parent perception of PCR. A child's appraisal of her loneliness had a significant negative association with depression among parents. Parent's perception of child loneliness and dissatisfaction was negatively associated with PCR and parental anxiety. High loner boys reported poor quality of relationship and more conflicts with their parents than girls. Children who share cordial relations with their parents had fewer conflicts and also scored low on loneliness.

Conclusion. These results suggest that the issue of loneliness and dissatisfaction among children has attained epidemic proportions in the Covid-19 era, and active interventions are needed to safeguard the mental health of children. Our study emphasizes the need to plan guidance strategies with a joint effort of schools and families to strengthen within family relations of children.

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INTRODUCTION

On 11 March 2020, Covid-19 was declared by WHO as a worldwide pandemic.[1] It presented children across the globe with uncommon challenges. On 22 March 2020, the Indian government declared lockdown, long-established routines were altered overnight and outdoor activities were restricted. The lockdown led to a change in social relationships; experiences of loneliness are especially important in children when many changes in social relationships occur. The social isolation related to the Covid-19 pandemic is a risk factor for depression, suicidal thoughts, alcohol and drug use.[2,3] An increasing number of children without any history of behavioural disorders showed signs of irritability, boredom, anxiety, depression, stress, fear, worry and various other negative feelings.[4]

Studying loneliness among children is important because it causes much social pain and is considered to be a risk factor for many mental and physical problems.[5] Loneliness is defined as an unpleasant feeling that occurs when someone perceives their network of social relationships to be deficient in a quantitative or qualitative way.[6] It is a subjective feeling of not being satisfied with either the amount or the quality of one's social relationships. Loneliness among children has been associated with adjustment problems, including lower self-esteem, higher rates of school dropout, higher anxiety and depressive symptoms.[7] Moreover, loneliness has been associated with physical problems, such as poor sleep quality and shorter sleep duration, and an increased frequency of doctor visits.[5]

We studied the association of loneliness and dissatisfaction among children with parent–child relationship (PCR) and conflict behaviour which had been severely affected during the lockdown. PCR affects the child's well-being.[8] Emotional support from parents, closeness and warmth helps children to overcome long-lasting traumatic events.[9] Spending prolonged uninterrupted time with family proved to be challenging and stressful for parents.[10] Emotional support from parents could play an important role in buffering children from the impact of the Covid-19 pandemic. However, parents may find it difficult to provide the same to their children as it is stressful for them to balance between work from home, caring for children and doing household chores without any regular support, especially if they are living in crowded places.[11]

Children were not mentally prepared and were in a dilemma of how to cope with the situation. Closing down of schools, absence of friends and peer group, newly imposed restrictions such as maintaining social distance and wearing masks added to their problems in adapting to the new scenario. Online classes compounded their problems. As is evident from the literature, children experienced worry (68.6%), helplessness (66.1%) and fear (62.0%) during Covid-19.[12] This was a crucial period for children and parents, and parental stress may have aggravated emotional and behavioural problems among children.[13]

This heightened stress may have led to loneliness and dissatisfaction among children during the pandemic lockdown. Thus, we focused on the incidence of loneliness and dissatisfaction among children and the perception of parents and children about loneliness during the lockdown. We studied the sociodemographic profile, gender, age and PCR as characteristics that may make children vulnerable to experiences of loneliness.

METHODS

We did an observational study from July to September 2020. After obtaining approval from the institute ethics committee, permission was sought from the competent authorities (Director Education, Chandigarh Administration) to conduct this online survey. The scales used for this study are free to use for academic purpose. We translated all three questionnaires in Hindi and validated in children and parents for the purpose of using Hindi version of these scales for this study (Hindi translation and cross-cultural validation manuscript submitted for consideration for publication as initial part of this study).

Inclusion and exclusion criteria

Children between 10 and 18 years of age, studying in either government or private schools of Chandigarh, and their parents who gave consent for themselves and their children were included. Children and parents with pre-existing diagnosed psychological comorbid conditions were excluded from the study.

Children and their parents were enrolled through multistage stratified random sampling to increase the trustworthiness of matched rate estimate. The study population was grouped into subclusters with a goal to minimize the individual stratum variance, and the sample was chosen from all clusters/strata. One cluster of government and private schools each was chosen from north, south, east and west of Chandigarh. The study was conducted in two stages.

Stage I. The cluster in charge (school principal) was contacted through email, WhatsApp and telephonically to explain the objectives of the study. The participants were informed in detail about the research objectives and methodology. Since the children were <18 years of age, consent was obtained from the parents. Google forms were sent through email and WhatsApp to the cluster in charge for circulation among the students and their parents in their respective clusters. Parents were requested to allow their children to fill their forms independently.

To ensure maximum participation, the principle investigator's contact number was also circulated for any further queries to the cluster incharge, teachers, parents and children. Google forms were sent to 5176 students and their parents.

Stage II: After taking electronic consent, telephonic interviews were done and an online survey was completed using Google forms. The Google form had two sections. The first part had sociodemographic details of the children and parents (name, age, gender, education); and work profile, income, type and size of family, religion, etc. of parents.

The second part had questions from parallel forms (children and parents) of all three scales used in the study. In addition to the three scales, parental distress was assessed using DASS-21 in parents Google form. Bilingual versions of all the scales were made available to all the participants of the study. Both children and parents were assessed on the following scales.

Loneliness and social dissatisfaction questionnaire (LSDQ; Asher et al.)[14]

It measures loneliness of the child and has child and parent versions. It has 24 items rated on a 5-point Likert scale (definitely yes to definitely no). The total scores of the scale range from 16 to 80. Of the 24 items, 16 measure feelings of loneliness, social adequacy and subjective perception of peer relation and 8 items are filter/tricky items, used to disguise the actual purpose of assessment. Item numbers 6, 9, 12, 17, 20 and 21 are scored reverse, and higher scores are indicative of higher feeling of loneliness, social inadequacy and poor perceived peer relationship. The Cronbach alpha for the child version is 0.89 and for the parent version is 0.96. The scale has also been reported to have excellent internal consistency.[15] The Hindi adaptation was done for both the child and parent versions and the Cronbach alpha (child 0.93; parent 0.98) and intraclass correlation coefficient (ICC; child 0.87 and parent 0.88) suggested good consistency.

Parent–child relationship (PCR) questionnaire (Furman and Giberson, 1995)[16]

This scale measures quality of PCR and has two parallel forms for the child and parents. It measures five factors: warmth, personal relationship, disciplinary warmth, power assertion and possessiveness. We used the personal relationship domain with 10 items as it has been found to be strongly associated with other domains of the scale.[14] Items were rated on a 5-point Likert scale (hardly at all to extremely much) and the score range is 10–50. Higher scores indicate more intimate relationship and togetherness. The Cronbach alpha has been reported to be 0.76 for parent version and 0.91 for child version. The scale has also been reported to have good to excellent internal consistency.[17] Cross-cultural adaptation was done and adapted Hindi version showed good to excellent internal consistency: Cronbach alpha (child 0.97; parent 0.94) and ICC (child 0.93; parent 0.90).

Conflict behaviour questionnaire (CBQ) short form (Robin and Foster, 1984)[18]

This self-report questionnaire is a short form of CBQ 44 by Prinz, Foster, Kent and O'Leary. It has 20 items with a true/false rating and measures the perceived conflict between child and parent interaction at home. It has two parallel forms for parent and child. The scale is reported to have good internal consistency for children 0.94 and for parents 0.95 (Prinz, Foster, Kent and O'Leary, 1979). High scores are indicative of a negative communication between child and parent. We used Hindi versions of both parent and child CBQ with cross-validation: ICC (child 0.80 and parent 0.88) and Cronbach alpha (child 0.89 and parent 0.92).

Depression, Anxiety and Stress Scale-21 (Lovinbond and Lovinbond, 1995)[19]

This scale was used to assess distress among parents. This self-report scale has three subscales: depression, anxiety and stress. Each subscale has 7 items and items have to be rated on a 4-point scale (0 not at all; 1 some degree; 2 considerable degree and 4 very much). Cut-off scores for three subscales are also given from normal to extremely severe stress, anxiety and depression. It has good psychometric properties. Cronbach alpha between 0.86 and 0.90 has been reported with good convergent validity (0.84 depression; 0.75 anxiety; 0.90 stress).

Sample size calculation

We estimated that about 23 000 students in the 10–18 years age group were studying in the four clusters of schools chosen for this study. Sample size was determined by Cochran formula for finite population. The estimated sample for our study was 647 to have a confidence level of 99% with real value within 5% of the surveyed value. To ensure better stability of variance and covariance, Google forms were sent to 8-fold of the estimated sample size.[20] Hence, 5176 Google forms were distributed.

Statistical analysis

Obtained data were analysed using IBM SPSS version 17.0 Statistics for Windows (IBM Corp., Armonk, NY, USA). Skewness of data was examined to see if the values were normally distributed. Descriptive statistics were used (frequency, percentage, mean and standard deviation) for demographic variables of the children and parents. Independent sample *t*-test was used to assess differences between the level of loneliness, group comparison on the basis of age, gender of child and parent along with other demographic variables. Bivariate correlation (Pearson product moment) was computed and used for analyses of the association between clinical and sociodemographic variables.

In line with a previous study, scores from child appraisal of loneliness and parent perception of child loneliness on LSDQ, loneliness scores were further divided into two half categories (Children: low loner 22–44; high loner 45–66; Parents: low loner 26–45; high loner 46–64).[15]

RESULTS

The Google form was sent to 5176 children and their parents and 3642 responded. However, 614 forms were incomplete and hence excluded from analysis. Thus 3028 forms of children and their parents were analysed with a 58.5% response rate. Thus, the final sample had 3028 children and their parents.

Sociodemographic profile

Among children, 1873 (61.9%) were girls, slightly less than half (1403; 46.3%) were matriculate and about one-fifth (600; 19.8%) had intermediate level education. Among parents, 1735 (57.3%) were fathers, their education levels were 1139 (39%) intermediate level and 401 (13.2%) graduate and postgraduate level; 1482 (48.9%) were employed in ministerial jobs and 629 (20.8%) were house-makers; 1857 (61.3%) parents were earning ≤₹39 032 per month. About half (1641; 54.2%) belonged to lower middle and 880 (29.1%) to upper middle socioeconomic status; 1661 (54.8%) were living in joint families and 1687 (55.7%) were residents of urban areas. The majority (2422; 80%) were Hindu by religion (Table I).

The mean (SD) scores on loneliness and social dissatisfaction measure for children were 52.62 (5.47) (LSDQ-C) and for parents 48.41 (4.46) (LSDQ-P). The mean score of child-reported PCR (PCR-C) was 35.65 (7.50) and for PCR-P 35.11 (7.43) and on conflict behaviour dimension 10.28 (1.91) (CBQ-C) and 9.52 (1.59) (CBQ-P; Table II).

TABLE I. Demographic profile of the children and their parents

Item	Children (*n*=3028), *n* (%)	Parents (*n*=3028), *n* (%)
Mean (SD) age (years)	14.3 (1.77)	41.8 (5.09)
Gender		
Men	1155 (38.1)	1735 (57.3)
Women	1873 (61.9)	1293 (42.7)
Education		
Illiterate	0	0
Middle	1025 (33.9)	573 (18.9)
Matric	1403 (46.3)	872 (28.8)
Intermediate	600 (19.8)	1182 (39.0)
Graduation/postgraduation	0	401 (13.2)
Occupation		
Unemployed/house-makers	–	629 (20.8)
Skilled/agriculture	–	178 (5.9)
Shop/sale	–	409 (13.5)
Clerical/ministerial staff	–	1482 (48.9)
Technician/associate professional	–	278 (9.2)
Senior officer/legislative services	–	52 (1.7)
Family income (₹)		
≤19 575	–	862 (28.5)
≤39 032	–	1857 (61.3)
≤78 062	–	192 (6.3)
≥78 063	–	117 (3.9)
Socioeconomic status		
Upper middle	–	880 (29.1)
Lower middle	–	1641 (54.2)
Upper lower	–	507 (16.7)
Family type		
Nuclear	–	1361 (45.1)
Joint	–	1661 (54.8)
Locality		
Urban	–	1687 (55.7)
Rural	–	1341 (44.3)
Religion		
Hindu	–	2422 (80.0)
Non-Hindu	–	606 (20.0)

TABLE II. Scores of children (*n*=3028) and parents (*n*=3028) on clinical measures (Loneliness and Social Dissatisfaction Questionnaire, parent–child relationship and Conflict Behaviour Questionnaire)

Scale	Children (*n*=3028)			Parents (*n*=3028)		
	Mean (SD)	Measure range	Sample range	Mean (SD)	Sample range	p value
LSDQ	51.98 (5.78)	16–80	22–66	48.07 (4.56)	26–64	<0.001
PCR	35.65 (7.50)	10–50	10–50	35.11 (7.43)	10–50	0.006
CBQ	10.28 (1.91)	0–20	4–17	9.52 (1.59)	4–15	<0.001

LSDQ loneliness and social dissatisfaction questionnaire PCR parent–child relationship CBQ conflict behaviour questionnaire

Level of loneliness and dissatisfaction (LSDQ-C and LSDQ-P)

Some children may experience more loneliness than others and level of loneliness may affect their social, emotional and behavioural functioning. We compared high loners and low loner groups to see its effect on PCR and conflict behaviour. In our sample, the range of child reported loneliness was 22–66 and parent reported child loneliness was 26–64. The original measure range for child and parent version is 16–80. The majority of children reported high on loneliness and dissatisfaction (2581; 85.2%) and the parents (2268; 74.9%) also reported that their children were feeling lonely staying at home during the Covid-19 pandemic (Fig. 1).

Association of high and low loneliness and dissatisfaction (LSDQ) with PCR, conflict behaviour questionnaire

We found a significant difference between low and high loneliness groups and its association with child reported PCR and conflict behaviour. The only negative but significant correlation was between level of loneliness and dissatisfaction (LSDQ-C) and CBQ-C (r=–0.137, n=3028, p<0.05). Children who scored low on loneliness and dissatisfaction, their loneliness level decreased as their PCR quality increased. These findings suggest that high loners scores were related to the quality of their PCR. For children, loneliness and dissatisfaction were inversely associated with conflict behaviour. Those who experienced more loneliness and dissatisfaction did not have much interaction with their parents, and thus had fewer conflicts. No significant association was found between level of loneliness (LSDQ-P) and PCR-P and CBQ-P.

Gender and age-wise difference on high and low level of loneliness

Gender-wise significant difference was seen between levels of loneliness (LSDQ-C) and PCR-C. Boys who scored high on loneliness significantly also reported poor PCR (low loneliness 35.77 [7.59]; high loneliness 36.85 [7.00]; p<0.001) and more conflicts with their parents (low loneliness 10.10 [1.90]; high loneliness 10.31 [1.91]; p<0.005) than girls. High loner children aged 14–18 years reported more conflicts with their parents (low loneliness 10.07 [1.94]; high loneliness 10.33 [1.92]; p<0.005) than low loner children of the same age range.

Distress among parents and its association with other variables

Distress among parents was assessed using DASS-21 in terms of stress, anxiety and depression. Obtained scores on DASS-21 were multiplied by two to make them comparable with the original scale (DASS-42). The mean score on stress was 22.78 (5.40), anxiety 19.46 (6.69), and depression subscale was 23.86 (5.35). Severity of distress was also assessed on the basis of the cut-off scores given by the developer of the scale. Approximately one-third of parents reported moderate 1155 (38.1%) to severe 1059 (35%) levels of stress. About 1324 (43.7%) reported severe anxiety and 515 (17%) extremely severe anxiety. Severe depression was reported by 1067 (35.3%) of the parents (Fig. 2).

Association between child's appraisal and parent's perception of loneliness, PCR and conflict behaviour

To explore the association between the children and parent reported loneliness, PCR and conflict behaviour dimensions from children and parent's perspective, Pearson product–moment correlation was used.

A significant positive association was found between child reported loneliness (LSDQ-C) and (LSDQ-P) parent perception of child's loneliness (r=–0.088, n=3028, p<0.01), PCR-C and PCR-P (r=–0.159, n=3028, p<0.01). Although non-significant, child reported CBQ-C was found negatively associated with parent reported CBQ-P.

Among children, significant negative association was found between child appraisal of his loneliness (LSDQ-C) with depression among parents (r=–0.036, n=3028, p<0.05) and non-significant negative association was found with child reported PCR-C, CBQ-C, stress-P and anxiety-P. Among parents, parent

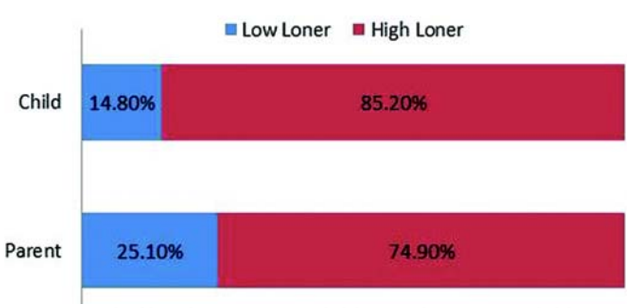

FIG 1. Level of loneliness among children and parents. *Children (score range 22–66; low loner 22–44; high loner 45–66). *Parent (score range 26–64; low loner 26–45; high loner 46–64)

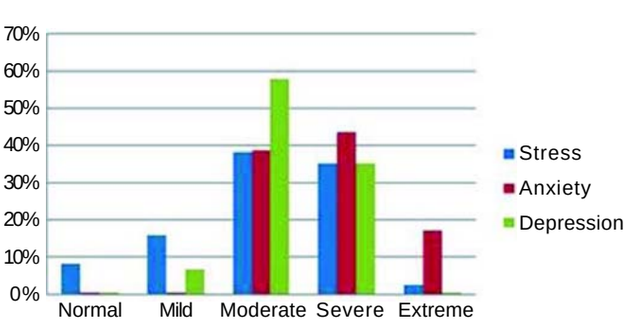

FIG 2. Severity of distress among parents

perception of child's loneliness had significant positive correlation with PCR (r = –0.044, n=3028, p<0.05) and also with anxiety (r = –0.039, n=3028, p<0.05) reported by them. No other significant association was found between LSDQ-P with CBQ-P, stress-P and depression-P.

Association between demographic and clinical variables

Age-wise children were categorized into two groups (age 10–13 years: n=1005; age 14–18 years: n=2023). Younger children reported better PCR than older children (p<0.05), and although non-significant, more conflicts and higher loneliness were reported by older children. Age-wise parent group division was also done (age 31–45 years: n=1303, age 45–60 years: n=1725). Younger parents reported more intimate relationship with their children than older parents (p<0.01). No other age-wise significant differences were observed among parents (Table III).

Gender-wise association was also explored for both children and parents groups (children: boys n=1155; girls n=1873; parents: fathers n=1735, mothers n=1293). Among children, significant difference was observed on PCR-C between boys and girls, girls have reported better quality of relationship with their parents (p<0.05), and similarly, among parents (PCR-P), mothers reported more intimate relationship and closeness to their children than fathers (p<0.05). Girls and mothers reported better PCR than boys and fathers. Boys scored significantly higher on loneliness measure (LSDQ-C) than girls (p<0.05). Father's perception of their children loneliness (LSDQ-P) was significantly higher than mothers (p<0.05). On the loneliness scale, boys felt more lonely than girls (p<0.05) and fathers also reported that their sons were feeling more lonely than their daughters (p<0.05). Girls and mothers reported better PCR than boys and fathers. No significant difference was observed on conflict behaviour measures among them (Table III).

Means were also compared by grade level of the children. *Post-hoc* analysis revealed children of higher secondary level felt more lonely than matriculate and middle-grade children (middle 52.29 [5.73]; matric 52.65 [5.50]; higher secondary 53.02 [5.77]; p<0.05) and no significant difference was observed on PCR and conflict behaviour dimension. Among parents, educational status-wise comparison revealed that parents who were graduate and above had more intimate relations and were more close to their children than parents who had studied till higher secondary (graduate and above 35.74 [7.30]; higher secondary 34.42 [7.52]; p<0.05) and less educated (up to higher secondary) were more stressed (graduate and above 12.01 [2.65]; higher secondary 11.29 [2.67]; p<0.05) than parents who were graduate and above.

Parents living in urban locality had more intimate relationships with their children in comparison to parents living in rural areas (urban 35.36 [7.34]; rural 34.54 [7.64]; p<0.01). Participants living in rural areas seemed to be more difficult and parents exhibited more negative communication with their children than those in urban areas during the Covid-19 lockdown (urban 32.58 [4.44]; rural 32.96 [4.40]; p<0.05).

DISCUSSION

We explored loneliness, PCR and conflict behaviour from both children's and parent's perspectives. During the Covid-19 pandemic, it assumed greater importance due to major alterations in lifestyle. There are noticeable gaps in the understanding of the effect of alteration in the lifestyle on child psychology that necessitates continued investigation. Our main purpose was to understand how the Covid-19 pandemic affected loneliness and dissatisfaction among children and its association with PCR and conflict behaviour during this stressful period.

Contrary to the findings of a previous study where only small proportion of participants scored high on loneliness, we found that majority of children reported high on loneliness and parents

TABLE III. Age and gender-wise comparative scores of children and parents on various clinical measures

Clinical measure	Mean (SD)	Mean (SD)	p value
Children (gender)	Boys (n=1155)	Girls (n=1873)	
LSDQ	52.80 (5.39)	52.33 (5.51)	0.020
PCR	35.50 (7.09)	35.83 (7.74)	0.005
CBQ	10.31 (1.89)	10.26 (1.92)	0.506
Children (age in years)	10–13 (n=1005)	14–18 (n=2023)	
LSDQ	52.50 (5.45)	52.68 (5.48)	0.414
PCR	36.01 (7.62)	35.44 (7.44)	0.050
CBQ	10.25 (1.89)	10.30 (1.92)	0.531
Parents (gender)	Fathers (n=1735)	Mothers (n=1293)	
LSDQ	48.62 (4.53)	48.25 (4.35)	0.025
PCR	34.85 (7.39)	35.45 (7.48)	0.027
CBQ	9.53 (1.58)	9.50 (1.61)	0.566
DASS 21			
Stress	22.72 (5.30)	22.85 (5.53)	0.519
Anxiety	19.48 (6.78)	19.44 (6.57)	0.854
Depression	23.82 (5.33)	23.91 (5.38)	0.660
Parents (age)	31–40 years (n=1303)	41–55 years (n=1725)	
LSDQ	48.51 (4.33)	48.33 (4.55)	0.278
PCR	35.77 (7.45)	34.61 (7.39)	0.000
CBQ	9.46 (1.60)	9.56 (1.59)	0.102
Stress	22.74 (5.35)	22.81 (5.44)	0.529
Anxiety	19.61 (6.86)	19.35 (6.56)	0.293
Depression	23.80 (5.38)	23.90 (5.33)	0.610

LSDQ loneliness and social dissatisfaction questionnaire PCR parent–child relationship CBQ conflict behaviour questionnaire
DASS 21 depression, anxiety and stress scale 21

also reported that their children were feeling lonely staying at home during the Covid-19 pandemic.[21–23] It is evident from the literature that children experienced higher emotional problems and also in regulating their behaviour.[4,24,25] We reported that boys who scored high on loneliness reported significantly more conflicts with their parents than high loner girls. Thus, boys appear to be more vulnerable to conflicts and may need more sensitive handling than girls.

Children who scored high on loneliness did not perceive their parents as comfort figures, and also, they did not like to go to their parents to talk about their feeling of loneliness. On the contrary, parents were aware of their child's loneliness. A significant positive association was found between LSDQ-C and parent reported level of loneliness. This suggests that as child reported loneliness increases, parent reported loneliness also increases. Akin to a previous study, significant negative correlation was found between the level of loneliness among children and PCR-C.[26] High loner children had lesser interaction with their parents and were not involved in family activities than low loner children.

Both children and parents reported high level of loneliness in children during the Covid-19 pandemic. Consistent with the study by de Minzi, we also found a significant and negative correlation between the LSDQ-C and the PCR-C.[27] Children who reported high quality of PCR were more likely to experience lower levels of loneliness.

Past research has shown that PCR is an important phenomenon to study because it can affect the long-term mental health of children.[8] We found high scores for PCR for the study sample, emphasizing a stable family structure. However, there was a significant difference between parent-reported and child-reported relationship score. This implies a communication and perception gap between the parents and children, as parents and children did not seem to share the same view.

Parental perceptions of child emotions play a vital role in child's emotional development, and a mismatch between the child and the parents' perceptions may hinder the development of intimacy in a PCR. There was a significant correlation between the child reported and the parent reported PCR quality. This suggests that both parent and child might report a high PCR quality. Child appraisal of PCR is important for the child and may protect him from experiencing loneliness during tough times.

PCR was found to be negatively associated with conflict behaviour. As child reported PCR quality increases, conflict behaviour decreases. Due to strict home confinement, both children and parents were stressed, and this may be due to transient relational problems they had during the pandemic lockdown. Similarly, it has been reported that those with positive interactions and good quality relations may experience less difficulties than those who had less cohesive and more conflicts.[28] Contrary to our findings, only few (14%) young adolescents reported low support and high conflicts with their parents and may not have experienced increased conflict behaviour and less close relations.[29] Hadiwijaya *et al*. explained that poor PCR and increased conflicts depend upon the type of relationship they shared in the past.[30] Children and parents did not share the same view on conflicts among them. Children reported more conflicts than their parents. High loner boys reported poor quality of relationship and more conflicts with their parents than girls.

We found that parents experienced high level of distress in terms of stress, anxiety and depression during the Covid-19 lockdown. This finding echoed with findings of previous studies.[10,11,31] Moreover, significant negative association was found between child appraisals of loneliness (LSDQ-C) with depression among parents. Although it is not possible to comment, based on our study, whether parental distress has a causal relationship with children's loneliness, it appears reasonable to assume that parental distress would need to be addressed to reduce loneliness among children.

When children were stratified according to age, there was no significant difference in the scores for loneliness and conflict behaviour. However, younger children scored significantly higher on PCR than older children. This could imply that as children grow older, they have different emotional needs which need to be addressed by the parents. Children of higher secondary level reported more loneliness than matriculate and middle-grade children while no difference was observed on PCR and conflict behaviour dimension. It has been reported that loneliness is distressing and common experience throughout adolescence and our study supports this view.

Girls reported significantly higher levels of PCR quality compared to boys in our study. They also reported significantly less conflict than boys. Thus, the parent–son relationship was probably more turbulent than the parent–daughter relationship. This is in line with earlier literature, which also reported gender differences for the prevalence of PCR.[32,33] This highlights the importance of looking at potential gender differences when investigating PCR.

It is important to understand PCR not only from the perspective of children and parents individually but also to consider the difference in perception of mothers and fathers. In addition, older parents reported significantly poorer PCR and significantly more conflict behaviour than the younger ones. This could be attributed to suboptimal communication due to a wider age gap. Mothers reported more intimate relationship and closeness to their children than fathers. In the Indian context, mothers are the primary caregivers and spend more time with children than fathers and consequently may have experienced more closeness to their children. Fathers are usually involved in exploring and challenging outdoor activities that were restricted during the Covid-19 pandemic.

Our findings suggest that loneliness among children was high in the Covid-19 era, and active interventions are needed to safeguard the mental health of children. However, the fact that significant positive association was found between child reported loneliness and parent perception of child's loneliness, indicates that parents were well aware of the problem and were likely to be perceptive to any planned intervention strategies to reduce loneliness among children. As high loner scores were related to PCR quality, the interventions could address loneliness problem among children and PCR.

Further research is needed to look into the causes of the mismatch between parents and children in how they perceive PCR and the impact of mismatched perceptions on child's mental well-being. This fact should be borne in mind in developing successful interventions to improve the mental well-being of children during this pandemic. Intervention programmes could aim at training parents to be aware of their children's perspectives. Coherent perspectives between parents and children may promote communication and trust between parents and children and may subsequently enhance the quality of PCR.

Our study has several limitations. Being an online survey,

the direction of association among clinical measures (loneliness and dissatisfaction, PCR and conflict behaviour) was measured through self-report scales, which may be subject to biased responses, i.e. respondent mindset, parental pressure or supervision while responding, social desirability. This limits the generalization of the findings of our study.

Strengths of the study

Our study has the advantage of a large sample size and a heterogeneous population representative of students from different socioeconomic backgrounds.

Implications and future directions

Our study showed that children who share cordial relations with their parents had fewer conflicts and also scored low on loneliness. This emphasizes the need for parental education to prevent the effects of loneliness on the future mental health of children. Our study emphasizes the need to plan guidance strategies with a joint effort of schools and families to strengthen within family relations of children. Families are the first centres of social life and the primary cores of education, and there is a need to make strategies and action plans to reduce loneliness among children. Our study suggests providing psychological and emotional support and strategies to prevent loneliness, dissatisfaction among children and its effect on PCR. Resolving parent–child conflict behaviour and technology-based intervention during prolonged period of home confinement may also be helpful. Loneliness and dissatisfaction among children may have long-term consequences, thus must be addressed.

Future studies should explore positive experiences during the Covid-19 pandemic along with loneliness and dissatisfaction and positive aspect of PCR from India and other countries as well.

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Conflicts of interest. None declared

REFERENCES

1 WHO. Healthy Parenting; 2020a. Available at *www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/healthy-parenting* (accessed on 24 Mar 2021).
2 Kawohl W, Nordt C. COVID-19, unemployment, and suicide. *Lancet Psychiatry* 2020;**7:**389–90.
3 Klomek AB. Suicide prevention during the COVID-19 outbreak. *Lancet Psychiatry* 2020;**7:**390.
4 Jiao WY, Wang LN, Liu J, Fang SF, Jiao FY, Pettoello-Mantovani M, *et al*. Behavioral and emotional disorders in children during the COVID-19 epidemic. *J Pediatr* 2020;**221:**264–6.e1.
5 Hawkley LC, Thisted RA, Masi CM, Cacioppo JT. Loneliness predicts increased blood pressure: 5-year cross-lagged analyses in middle-aged and older adults. *Psychol Aging* 2010;**25:**132–41.
6 Perlman D, Peplau LA. Toward a social psychology of loneliness. *Pers Relationsh* 1981;**3:**31–56.
7 Mahon NE, Yarcheski A, Yarcheski TJ. Differences in social support and loneliness in adolescents according to developmental stage and gender. *Public Health Nurs* 1994;**11:**361–8**.**
8 Pinquart M. Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Dev Psychol* 2017;**53:**873**.**
9 Lutz KF, Anderson LS, Riesch SK, Pridham KA, Becker PT. Furthering the understanding of parent-child relationships: A nursing scholarship review series. Part 2: Grasping the early parenting experience – The insider view. *J Spec Pediatr Nurs* 2009;**14:**262–83.
10 Coyne LW, Gould ER, Grimaldi M, Wilson KG, Baffuto G, Biglan A. First things first: Parent psychological flexibility and self-compassion during COVID-19. *Behav Anal Pract* 2020;**14:**1092–8.
11 Cluver L, Lachman JM, Sherr L, Wessels I, Krug E, Rakotomalala S, *et al*. Parenting in a time of COVID-19. *Lancet* 2020;**395:**e64.
12 Saurabh K, Ranjan S. Compliance and psychological impact of quarantine in children and adolescents due to COVID-19 pandemic. *Indian J Pediatr* 2020; **87:**532–6.
13 Spinelli M, Lionetti F, Pastore M, Fasolo M. Parents' stress and children's psychological problems in families facing the COVID-19 outbreak in Italy. *Front Psychol* 2020;**11:**1713.
14 Asher SR, Hymel S, Renshaw PD. Loneliness in children. *Child Dev* 1984;**55:** 1456–64**.**
15 Xu N. The association between parent-child relationship and child loneliness; 2017. Available at *https://digitalcommons.du.edu/etd/1286* (accessed on 24 Mar 2021).
16 Furman W, Giberson RS. Identifying the links between parents and their children's sibling relationships. In: Shulman S (ed). *Human development, Vol. 7. Close relationships and socioemotional development*. New York:Ablex Publishing; 1995**:**95–108.
17 Gerdes AC, Hoza B, Pelham WE. Attention-deficit/hyperactivity disordered boys' relationships with their mothers and fathers: Child, mother, and father perceptions. *Dev Psychopathol* 2003;**15:**363–82.
18 Robin AL, Foster SL. Negotiating parent-adolescent conflict: A behavioral-family systems approach. New York:Guilford Press; 2002.
19 Lovibond SH, Lovibond PF. *Manual for the depression anxiety stress scales*. Sydney:Psychology Foundation Australia; 1995.
20 Wani RT. Socioeconomic status scales-modified Kuppuswamy and Udai Pareekh's scale updated for 2019. *J Family Med Prim Care* 2019;**8:**1846–9.
21 Bu F, Steptoe A, Fancourt D. Who is lonely in lockdown? Cross-cohort analyses of predictors of loneliness before and during the COVID-19 pandemic. *Public Health* 2020;**186:**31–4.
22 Groarke JM, Berry E, Graham-Wisener L, McKenna-Plumley PE, McGlinchey E, Armour C. Loneliness in the UK during the COVID-19 pandemic: Cross-sectional results from the COVID-19 psychological wellbeing study. *PLoS One* 2020;**15:**e0239698.
23 Thompson T, Rodebaugh TL, Bessaha ML, Sabbath EL. The association between social isolation and health: An analysis of parent-adolescent dyads from the family life, activity, sun, health, and eating study. *Clin Soc Work J* 2020;**48:** 18–24.
24 Di Giorgio E, Di Riso D, Mioni G, Cellini N. The interplay between mothers' and children behavioral and psychological factors during COVID-19: An Italian study. *Eur Child Adolesc Psychiatry* 2021;**30:**1401–12.
25 Xie J, Tong Z, Guan X, Du B, Qiu H, Slutsky AS. Critical care crisis and some recommendations during the COVID-19 epidemic in China. *Intensive Care Med* 2020;**46:**837–40.
26 Antognoli-Toland PL. Parent-child relationship, family structure, and loneliness among adolescents. Texas Woman's University; 2000. Available at *https://search.proquest.com/dissertations-theses/parent-child-relationship-family-structure/docview/304668187/se-2?accountid=37183* (accessed on 24 Mar 2021).
27 Richaud de Minzi MC. Loneliness and depression in middle and late childhood: The relationship to attachment and parental styles. *J Genet Psychol* 2006;**167:** 189–210.
28 Laursen B, DeLay D, Adams RE. Trajectories of perceived support in mother–adolescent relationships: The poor (quality) get poorer. *Dev Psychol* 2010;**46:**1792**.**
29 Allen JP, Manning N. From safety to affect regulation: Attachment from the vantage point of adolescence. *New Dir Child Adolesc Dev* 2007;**117:**23–39.
30 Hadiwijaya H, Klimstra TA, Vermunt JK, Branje SJT, Meeus WH. On the development of harmony, turbulence, and independence in parent-adolescent relationships: A five-wave longitudinal study. *J Youth Adolesc* 2017;**46:** 1772–88.
31 Chung G, Lanier P, Wong PY. Mediating effects of parental stress on harsh parenting and parent-child relationship during coronavirus (COVID-19) pandemic in Singapore. *J Fam Violence* 2022;**37:**801–12.
32 Rudolph KD, Hammen C. Age and gender as determinants of stress exposure, generation, and reactions in youngsters: A transactional perspective. *Child Dev* 1999;**70:**660–77**.**
33 van de Looij-Jansen PM, Jansen W, de Wilde EJ, Donker MC, Verhulst FC. Discrepancies between parent-child reports of internalizing problems among preadolescent children: Relationships with gender, ethnic background, and future internalizing problems. *J Early Adolesc* 2011;**31:**443–62**.**