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PERSPECTIVE

Complex PTSD and Forced Migration of Children and Adolescents from Latin America

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Abstract: In order to provide culturally competent care to children and adolescents that have been subject to forced migration, clinicians must first understand the unique trauma these individuals experienced. Victims of forced migration frequently experience trauma pre-displacement, typically resulting from the same factors that led to the forced migration. They then often experience trauma during the migration itself and post-migration as they settle in a new environment, sometimes without their families if they are unaccompanied minors. An increased risk of developing complex PTSD (C-PTSD) correlates with the number of adverse childhood experiences (ACEs) such as those experienced by children and adolescents that experience forced migration. Understanding the nuances of these traumas and their specific manifestations for the individual child or adolescent is critical for effective behavioral health support. Trauma signature (TSIG) analysis offers clinicians a method to understand the relationship between traumatic events and the physical and psychological consequences to best support these victims.

Keywords: Complex trauma; C-ptsd; Forced migration; Forced displacement; Unaccompanied minors

1. Introduction

Forced migration (also called forced displacement) is an involuntary or coerced movement "as a result of persecution, conflict, generalized violence or human rights violations" [1].

As of 2022, the number of people displaced by force exceeds 100 million, meaning 1 out of every 78 people on the planet have been involuntarily relocated. Forty-one percent of displaced people are children [2]. In the United States, the bulk of forced migration comes from Latin America and the Caribbean. In 2021, the number of displaced Venezuelans grew by more than half a million and the socio-political crisis in Nicaragua caused 100,000 additional people to seek asylum [2]. The migration of children specifically is driven by desperate conditions for many children in their home countries. UNICEF estimates that "6.3 million migrant children in the region are facing life-threatening situations and multiple forms of violence" (UNICEF) [3]. Some of those children remain in place,

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others migrate within their home countries and become an Internally Displaced Person (IDP). Only a fraction of the children facing desperate conditions reach the United States and a fraction of those are unaccompanied minors.

In the 12 months ending on February 29, 2021, the U.S. Customs and Border Protection (CBP) encountered 29,792 unaccompanied children and single minors along the Southwest Border. Of the total, 2,942 of these were under the age of 12 years old and 26,850 are aged 13-17 years old" [4].

The statistics from the CBP don't indicate how many unaccompanied minors actually reach or attempt to reach the United States from Latin America. The numbers from the U.S. Customs and Border Protection only reflect the unaccompanied minors that are encountered by CBP. Minors that evade detection, that are somehow diverted during the migration, or who reach a destination outside of the United States are not counted.

However, the numbers do indicate that, starting in April 2020, there has been an increase in encounters of unaccompanied children from Central America at the Southwest Border [5].

2. What Happens to the Children and Adolescents Who Experience Forced Migration?

The potentially traumatizing experiences of displaced minors often begin before the migration. The children have often been traumatized by the factors driving migration – violence, poverty, and disease. During the chaos of a forced displacement, minors may become separated from their families and exposed to additional dangers, including forced recruitment, abduction, human trafficking, exploitation, sexual violence, and rape. For many children, detention at the border, housing in a refugee camp, or institutional care may span many years, effectively depriving them of the love and family so crucial to their healthy emotional development. Children who are relocated to the United State face new pressures, including learning a new language, adjusting to school, learning cultural norms, adjusting to the family's loss of status, and – for unaccompanied minors – dealing with a loss of family [6-8]. The series of traumatic experiences in three parts (before migration, during migration, and relocation after migration) has been labeled Trilateral Migration Trauma [9].

The prevalence of mental health disorders in children and adolescent refugees vary dramatically from one study to the next. Studies found incidences of PTSD in those living in refugee camps that range from 0-87 percent and anxiety at depression from 9.5 to 95.5 percent [10]. The variability in these studies speaks to the need for more research to understand the full extent of the psychological implications of forced migration. It also highlights the differences in both the experiences and cultures of these populations, emphasizing the importance of taking both into account when dealing with those subjected to forced migration. The research does, however, consistently find maladjustment problems amongst children living in refugee camps [11]). A UNICEF report during the peak of civil war in Colombia found that up to 80% of internally displaced children "show fear, cry, have nightmares, wet their beds, do not concentrate, have memory problems or are more dependent on adults" [12].

3. The Potentially Traumatizing Experiences of Forced Child Migrants from Latin America

Each child migrant has a unique story. The traditions, cultures, and values vary between the countries and regions of origin. The potentially traumatizing events experienced before, during, and after migration also vary, but a common thread is that individual children often experience multiple potentially traumatic events and different types of events. For diagnosis and treatment of individual patients with culturally sensitive interventions, it is necessary to understand the experience of each group and of individuals within that group [13].

Daily Hardships: A study of 363 Sierra Leonean youth found that daily stressors were the primary intermediate factor through which war exposure connects to psychological distress [14]. Daily hardships include domestic violence, housing insecurity, food and water shortages, family disintegration, and decreased or no access to core services [10]. For example, estimates of wasting (low weight to height ratio) in children under five in Venezuela have skyrocketed from 3.2% in 2009 to 15.5% of children by 2017 [15,16].

Prolonged exposure to violence: In war, children may witness violence from the conflict itself. However, there are many other bi-products of conflict that are potentially traumatizing. Children may have to deal with the death of family members, the physical separation from family or friends, and physical, sexual or psychological harm. They may also participate in the violence themselves if they are forced to inflict harm on others [10]. Even more, prolonged exposure to violence is not limited to actual war zones. In the Northern Triangle of Central America (NTCA), composed of Honduras, El Salvador, and Guatemala, the homicide rate is higher than in most regions experiencing actual civil war or armed conflict [17]. Gangs use violence, including sexual violence, and terror in the day-to-day lives of citizens.

Lack of a "normal" baseline experience: PTSD was conceived in the context of American soldiers who went from a relatively stable life to a war zone, and then return

to relative normality. For many of the children who are forced migrants, they have no baseline "normal" experience. Their entire childhood may have been subject to violence from gangs or warring factions [8]. Indeed, there are unique challenges associated with treating populations who have only ever experienced negative circumstances in their lives [18].

Family separation: Unlike a traumatic event that a child experiences but then returns to a supportive family, many of the displaced children experienced prolonged separation from family (and some may be permanently severed from their families). Little is known about the health outcomes of unaccompanied minors compared to adolescents and children who were displaced together with their families, but it is clear that unaccompanied minors experience more violence and a greater number of potentially traumatic events [13].

Repeatedly experiencing a loss of safety: the migration was undertaken to seek safety. Often, the reality of the new environment is, once again, vulnerability to violence [18,19].

4. The Traumatic Impact of Human-made Trauma versus Natural Disaster

There is some evidence that human-made disaster has more traumatizing potential than natural disaster [20]. In the case of forced displacement from Latin America the two factors often mix. Natural disaster and the COVID-19 pandemic may have depleted economic resources in the location of origin, while violence by gangs and criminal syndicates may have created an additional layer of traumatic events [21].

5. The Dosage Effect of Repeated Traumatic Events in the Development of C-PTSD

PTSD is usually the result of one or more impersonal, traumatic events (such as war, natural disaster, or a car accident).

Complex PTSD (C-PTSD) is associated with more frequent, more diverse, and more numerous traumatic experiences in childhood [22]. C-PTSD in adults is typically a result of traumatic interactions experienced as a child during critical developmental stages, especially between the child and a parent or other caregiver. These traumatic events can interfere in the child's development of the internal working model of self [23].

Repeated adverse childhood experiences (ACEs) have more impact than single or isolated experiences. The "dosage effect" is apparent even in cases where the episodes are less severe than what is typically experienced by forced migrants from Latin America and the Caribbean. A longitudinal British civil service-based cohort study (N = 7,870, 69.5% male), found that the risk of problematic drinking increased as the number of adverse childhood experiences increased [24].

Forced migrants from Latin America and the Caribbean can experience a large number of ACEs, including episodes of extreme violence. This is especially true for unaccompanied minors.

6. The Cumulative Impact on Children: The Trauma Signature

The displacement trajectory for displaced persons creates a "trauma signature." Borrowing and generalizing from a description of internal displacement in Colombia [25], we can describe a sequence of stages: (1) pre-displacement (threats and vulnerability), (2) expulsion/migration (separation from family, more danger, and more vulnerability), (3) initial adaptation to relocation, (4) resettlement (typically, a protracted process for forced migrants).

7. Trauma Signature Analysis

Trauma signature (TSIG) analysis seeks to understand the relationship between exposure to traumatic events (natural disaster, wars, famine, and other extreme events) and the physical and psychological consequences. The goal is to provide guidance for effective mental health and psychosocial support [26].

The rationale of understanding the trauma signature is that behavioral health support that is tailored to meet the defining features of the event will be more effective. Each forced migration has a novel pattern of traumatizing exposure. Understanding these exposures can help us predict the mental health consequences. Specific analysis of the unique series of traumatic events will determine the shape and prevalence of the mental health consequences [27].

8. Culturally Sensitive Treatment

Displaced minors, especially adolescents, often split off the formative years of their development as they try and fit into a different culture. The result can be feelings of disconnectedness and disorientation. They will often be alienated by a trauma narrative that explains their experience in political and psycho-educational terms. In treatment, they need to build an integrated identity by creating connections between the world that they left, the new culture they live in now, and their own private experiences [28].

Therapy needs to factor in the culture and belief system of the client. For example, depending on the culture and the individual's belief system, religion can be a source of

resilience, or it can actually be an obstacle to seeking or fully utilizing mental health treatment [29]. While the belief systems of displaced persons from Latin American and the Caribbean will be more familiar to culturally sensitive Western-trained clinicians and clinicians from Latin America than in other parts of the world, the clinician needs to be attuned to the cultural nuances and the unique experiences of the individual client.

Trauma Systems Therapy for Refugees (TST-R) is one approach that seeks to incorporate support from multiple sources through a four-tiered approach and places importance on including culture in the process of healing [30]. The first tier focuses on parent and community support. The second tier incorporates skills-based groups. The third and fourth tier consist of individual therapy and family support respectively. Each tier is mediated by a cultural broker who shares not only the language but also the culture of the refugee. In this way, the process of healing reaches beyond the therapy session and is done entirely in the context of their culture. This approach shows much promise in effectively helping refugees heal from trauma, but much more research is needed to demonstrate the effectiveness of the approach on a large scale [31].

9. Conclusions

Mental health professionals have been acutely aware of the ramifications of experiencing repeated traumatic events in childhood, including the potential for intergenerational transmission of the traumas. Researchers have been contributing systematically to the evidence and theoretical base for trauma and crisis intervention for refugees and asylum seekers since the later part of the 20th century [32,33].

Clinicians should work to understand the unique trauma signature of children entering therapy and to understand the trauma signature of adults who experienced forced migration from Latin America as a child or adolescent.

Effective assessment and care requires the therapist to be alert to the early childhood experiences and the impact of those experiences on the child. Understanding the adverse childhood experiences of each individual can help the clinician tailor therapy to the individual and help the therapist provide culturally sensitive care.

Conflict of Interest

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ARTICLE

The Influence of Parent-Child Relationship on Pupils' Learning Motivation: The Mediating Role of Teacher-Student Relationship

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Abstract: Objective: The study is to analyze the influence of parent-child relationship on pupils' learning motivation, and to explore the mediating mechanism of teacher-student relationship in parent-child relationship and learning motivation. **Method:** This study conducted a questionnaire survey on 213 pupils in Grades 5 and 6 in two schools in Beijing using Pianta's teacher-student relationship scale revised by Qu, Dornbush's parent-child intimacy scale revised by Zhang and the learning motivation scale adapted by Hu. **Results:** Gender, grade, whether they are the only child and to be a class cadre or not show significant differences in some dimensions of parent-child relationship, teacher-student relationship and learning motivation. The total scores of parent-child relationship, teacher-student relationship and learning motivation are positively correlated, and some sub dimensions are also significantly correlated. Parent-child relationship and teacher-student relationship have a significant positive predictive effect on learning motivation, and parent-child relationship has a significant positive predictive effect on teacher-student relationship. Teacher-student relationship plays a mediating role in the influence of parent-child relationship on learning motivation. **Conclusions:** Parent-child relationship can promote the relationship between teachers and students, and then enhance pupils' learning motivation.

Keywords: Parent-Child relationship; Teacher-Student relationship; Learning motivation; Pupil

1. Introduction

Learning motivation is the inner strength that drives individuals to consciously engage in learning, to understand and transform the world and gain future development. Learning motivation can be divided into intrinsic motivation and extrinsic motivation, which is determined by the nature of learning. Learning motivation is mainly influenced by learners' own mental state, which is a tendency of power [1]. Stimulating students' learning enthusiasm through motivation can promote students to achieve their academic goals [2-4]. Learning motivation is the motivation shown in learning and related activities. Sun (2012) believes that there is a close relationship between learning motivation and learning power, which directly affects whether students can study independently

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and their enthusiasm for learning [4]. Li (2007) thinks that learning motivation is an internal initiating mechanism, which stimulates students' autonomous learning and supports students to achieve specific educational goals [5]. The survey on the learning and development of primary school students conducted by Huang (2021) shows that only 8.4% of the pupils want to go to school and are willing to learn [6]. Therefore, it is necessary to study the influencing factors of learning motivation.

Family exerts an imperceptible influence on the growth of children. The home environment is the children's first school and parents are their first teachers. Therefore, parents' behavior and intimate relationships affect their children's whole life [7]. Parent-child relationship has the most direct impact on students' learning motivation, self-efficacy and whether they are tired of learning. A good parent-child relationship can promote the harmonious coexistence between parents and children. It includes not only the attitude and behavior towards themselves and others, but also the emotions and values recognized by both parents and children [8]. Children who grow up in families with a good atmosphere and close parent-child intimacy will have more opportunities to express their opinions clearly and communicate with their parents equally [9]. However, when the family environment is unpleasant or full of conflicts, children will be rebellious: dissatisfied with their parents' criticism, punishment and the over protection of the mother, etc. If there is less communication and understanding between parents and children, or parents even do not know children's interests and friendships, it will lead to poor learning [10]. Therefore, how to improve and cultivate the parent-child relationship has become one of the concerns of the academic world.

Meanwhile, parent-child attachment plays an important role in teacher-student relationship and school adaptation. Parent-child communication has a mediating effect between teacher-student relationship, peer relationship and school adaptability, which is the mediator variable of the three [11].

Campus environment is one of the important places for students' learning and teacher-student relationship is significant in the basic social relationship of students. If the relationship between teachers and students changes, students' learning motivation will change accordingly. There is a close relationship between learning motivation and teacher-student relationship. Building up a good teacher-student relationship can bring a harmonious classroom atmosphere, make students more willing to accept new knowledge and have a stronger desire for knowledge. How to build a democratic, equal and mutual trust teaching atmosphere has become one of the concerns of educators. A good teacher-student relationship can effectively stimulate and maintain students' learning motivation, which will affect their academic performance. From the perspective of the relationship between teacher-student relationship and academic performance, the relationship will have a significant impact on students' emotion and further affect their academic performance [12]. Building a new relationship between teachers and students is an undeniable psychological phenomenon that needs to be established in reality. What we need to do now is to actively guide teachers and students in a healthy direction [13].

In this paper, a questionnaire survey was used to study the relationship between parent-child relationship, teacher-student relationship and learning motivation, in order to explore the influence of the relationships on pupils' learning motivation.

2. Materials and Methods

2.1 Participants

This study investigated 217 primary school students in Beijing. 217 questionnaires were distributed and collected in two primary schools. After screening, 4 incomplete questionnaires were eliminated, and 213 valid questionnaires were obtained.

Among them, 97 are male, accounting for 45.54%; 116 are girls, accounting for 54.46%. 109 students are in Grade 5, accounting for 51.17%; 104 students are in Grade 6, accounting for 48.83%. 114 pupils are single-child, accounting for 53.52%; 99 pupils are non-single-child, accounting for 46.48%. 119 are class cadres, accounting for 55.87%; 94 are not class cadres, accounting for 44.13%.

2.2 Methods

This study adopts the method of questionnaire. The parent-child intimacy scale, teacher-student relationship scale and learning motivation scale were distributed to two primary schools in Beijing. The pupils filled in the questionnaires by themselves, and then returned the questionnaires.

2.3 Materials

2.3.1 Student-Teacher Relationships Scale

This study adopts the teacher-student relationship scale adapted by Qu and revised according to Pianta's Student-Teacher Relationships Scale (STRS) [14]. The scale measures the teacher-student relationship in a self-report way. Positive teacher-student relationship includes 7 intimacy questions, such as "The relationship between me and my teacher is close and warm.", which are 1, 10, 12,

13, 15, 18 and 23; 4 supporting questions, such as "As long as I make progress, the teacher will praise me.", which are 3, 5, 11 and 20; 5 satisfaction questions, such as "My present relationship with my teacher is exactly what I hope.", which are 8, 16, 19, 21 and 22. The negative teacher-student relationship includes 7 conflicting questions, such as "The teacher and I always seem to struggle with each other.", which are 2, 4, 6, 7, 9, 14 and 17. The Likert 4-point scale was used, from 1 "Strongly Disagree" to 4 "Strongly Agree". The inner consistency of the scale was greater than 0.80.

2.3.2 Parent-Child Intimacy Scale

The parent-child intimacy scale adopts Dornbusch's scale revised by Zhang [15]. The scale is divided into two dimensions: the relationship between father and child, and the relationship between mother and child, with 9 questions each, such as "When you express your feelings to your father, you feel comfortable." or "When you express your feelings to your mother, you feel comfortable.". The Likert 5-point scale was used, which was 1 "never", 2 "rarely", 3 "sometimes", 4 "often" and 5 "very often". The inner consistency of the scale was greater than 0.90.

2.3.3 Learning Motivation Scale

This study adopts Hu's learning motivation scale [16]. There are 24 questions in the scale, which is divided into two dimensions: intrinsic motivation and extrinsic motivation. Among them, 1, 2, 3, 5, 7, 9, 13, 15, 19, 20, 21 and 23 are 12 items about intrinsic motivation, such as "I like learning very much and I am very involved in learning."; and 4, 6, 8, 10, 11, 12, 14, 16, 17, 18, 22 and 24 are 12 items about extrinsic motivation, such as "In order to achieve good academic performance, I will study hard even if I don't like the courses.". The Likert 6-point scale was used, from 1 "Strongly Disagree" to 6 "Strongly Agree". The inner consistency of the scale was 0.83, and the test-retest reliability was 0.81.

2.4 Statistical Method

SPSS 26.0 was used to conduct independent sample t-test, correlation analysis, regression analysis and mediating effect analysis.

3. Results

3.1 Variance Test of Demographic Variables in Parent-Child Relationship, Teacher-Student Relationship and Learning Motivation

Variance analysis was performed to show the differences of parent-child relationship, teacher-student relationship and learning motivation among students of different genders. In terms of scores of father-child intimacy, boys are significantly higher than girls.

Variance analysis was performed to show the differences of parent-child relationship, teacher-student relationship and learning motivation among students of different grades. The total scores of teacher-student relationship and learning motivation in Grade 5 were significantly lower than that in Grade 6.

Variance analysis was performed to show the differences of parent-child relationship, teacher-student relationship and learning motivation between single-child and non-single child. In terms of total score of parent-child relationship and the supporting score of teacher-student relationship, the single-child is significantly higher than the non-single child.

Variance analysis was performed to show the differences of parent-child relationship, teacher-student relationship and learning motivation among students to be a class cadre or not. In terms of total score of teacher-student relationship, intrinsic motivation score of learning motivation, and the total score of learning motivation, the scores of students who are class cadres are all significantly higher than those who are not class cadres.

3.2 Common Method Biases

The data are from the participants' self-report, so the Harman's single-factor test is used to test the common method biases. The results showed that the variance expounded by the first factor was 21.04% (<40%). That is, there was no serious common method bias.

3.3 Correlation between Parent-Child Relationship and Teacher-Student Relationship

Table 2 shows a significant correlation between all indicators (p<0.01). There was a significant negative correlation between conflicting and each indicator (p<0.01), and there was a significant positive correlation among other indicators (p<0.01).

3.4 Correlation between Parent-Child Relationship and Learning Motivation

The results in Table 3 show that except that no correlation exists between father-child intimacy and extrinsic motivation, there is a significant positive correlation among other indicators (p<0.05).

3.5 Correlation between Student-Teacher Relationship and Learning Motivation

The results in Table 4 show that except that extrinsic

Table 1. Variance test of demographic variables in parent-child relationship, teacher-student relationship and learning motivation

	Gender			Grade			The only child or not			Class cadre or not		
	Male (N=97)	Female (N=116)	*t*	Grade 5 (N=109)	Grade 6 (N=104)	*t*	single-child (N=114)	non-single-child (N=99)	*t*	class cadre (N=119)	not class cadre (N=94)	*t*
Father-child intimacy	32.67 (7.40)	29.99 (9.08)	2.370*	30.39 (7.46)	32.07 (9.33)	–1.440	32.36 (8.73)	29.89 (7.95)	2.150*	31.82 (7.86)	30.44 (9.12)	1.170
Mother-child intimacy	35.91 (6.96)	35.48 (7.81)	0.420	34.81 (6.88)	36.59 (7.88)	–1.760	36.67 (6.90)	34.54 (7.86)	2.090*	35.55 (7.49)	35.83 (7.37)	–0.270
Total score of parent-child relationship	68.58 (12.53)	65.47 (14.57)	1.650	65.20 (12.42)	68.65 (14.84)	–1.840	69.03 (13.70)	64.42 (13.43)	2.490*	67.38 (13.48)	66.27 (14.11)	0.590
Intimacy	20.44 (4.38)	20.01 (4.13)	0.740	18.85 (3.72)	21.63 (4.31)	–5.020***	20.60 (4.35)	19.76 (4.08)	1.440	21.11 (3.93)	19.06 (4.36)	3.590***
Conflicting	9.90 (3.77)	9.62 (3.20)	0.580	10.27 (3.93)	9.20 (2.82)	2.280*	9.75 (3.56)	9.75 (3.38)	–0.004	9.34 (2.76)	10.27 (4.15)	–1.870
Supporting	13.45 (2.31)	13.09 (2.52)	1.076	12.79 (2.30)	13.75 (2.47)	–2.940**	13.61 (2.29)	12.85 (2.52)	2.320*	13.58 (2.26)	12.85 (2.57)	2.200*
Satisfaction	15.79 (2.47)	15.72 (2.34)	0.211	15.26 (2.55)	16.28 (2.11)	–3.190**	16.04 (2.37)	15.42 (2.39)	1.900	16.24 (2.09)	15.15 (2.62)	3.280***
Total score of teacher-student relationship	74.79 (10.48)	74.21 (9.68)	0.424	71.63 (10.03)	77.45 (9.17)	–4.410***	75.51 (10.22)	73.28 (9.72)	1.620	76.59 (8.48)	71.80 (11.19)	3.550***
Intrinsic motivation	52.35 (7.12)	51.33 (6.50)	1.095	50.61 (7.21)	53.04 (6.12)	–2.650**	51.98 (6.82)	51.58 (6.79)	0.440	53.31 (5.27)	49.87 (7.95)	3.610***
Extrinsic motivation	50.13 (9.21)	49.72 (7.83)	0.358	47.96 (8.42)	51.94 (8.07)	–3.520***	49.90 (8.30)	49.91 (8.71)	–0.010	49.99 (8.11)	49.80 (8.94)	0.170
Total score of learning motivation	102.48 (13.91)	101.04 (11.25)	0.836	98.57 (12.37)	104.98 (11.88)	–3.860***	101.89 (12.07)	101.48 (13.08)	0.230	103.30 (10.56)	99.67 (14.44)	2.050*

Note: *p<0.05, **p<0.01, ***p<0.001.

Table 2. Correlation between parent-child relationship and teacher-student relationship

	1	2	3	4	5	6	7	8
1.Father-child intimacy	1							
2.Mother-child intimacy	0.496**	1						
3.Total score of parent-child relationship	0.883**	0.846**	1					
4.Intimacy	0.345**	0.467**	0.464**	1				
5.Conflicting	–0.241**	–0.231**	–0.273**	–0.427**	1			
6.Supporting	0.307**	0.346**	0.376**	0.571**	–0.539**	1		
7.Satisfaction	0.272**	0.268**	0.313**	0.520**	–0.476**	0.622**	1	
8.Total score of teacher-student relationship	0.368**	0.425**	0.456**	0.832**	–0.770**	0.818**	0.773**	1

Note: *p<0.05, **p<0.01.

Table 3. Correlation between parent-child relationship and learning motivation

	1	2	3	4	5	6
1.Father-child intimacy	1					
2.Mother-child intimacy	0.496**	1				
3.Total score of parent-child relationship	0.883**	0.846**	1			
4.Intrinsic motivation	0.234**	0.222**	0.264**	1		
5.Extrinsic motivation	0.094	0.168*	0.149*	0.339**	1	
6.Total score of learning motivation	0.191**	0.234**	0.244**	0.772**	0.860**	1

Note: *p<0.05, **p<0.01.

motivation has no significant correlation with conflicting, supporting, satisfaction, and the total score of teacher-student relationship, and conflicting has no significant correlation with the total score of learning motivation, other indicators all have significant correlation (p<0.05). There was a significant negative correlation between conflicting and intimacy, supporting, satisfaction, total score of student-teacher relationship and intrinsic motivation (p<0.01), and there was a significant positive correlation among other indicators (p<0.01).

3.6 The Influence of Parent-Child Relationship on Learning Motivation: Test for the Mediating Effect of Teacher-Student Relationship

Results in Table 5 show that in Equation 1, parent-child relationship positively predicts learning motivation (β=0.222, p<0.001). In Equation 2, parent-child relationship positively predicts student-teacher relationship (β=0.333, p<0.001). In Equation 3, student-teacher relationship positively predicts learning motivation (β=0.297, p<0.001), and the influence of parent-child relationship was marginal (β=0.123, p<0.067).

The main results of mediating effect analyzed by "process" plug-in [17] are shown in Table 6. The Bootstrap 95% confidence interval of indirect effect does not contain 0, which indicates that the mediating effect is established. That is, the teacher-student relationship is the mediating variable of parent-child relationship affecting learning motivation. Since the Bootstrap 95% confidence interval of the direct effect contains 0, this mediating effect is a complete mediating effect.

Table 4. Correlation between student-teacher relationship and learning motivation

	1	2	3	4	5	6	7	8
1.Intimacy	1							
2.Conflicting	–0.427**	1						
3.Supporting	0.571**	–0.539**	1					
4.Satisfaction	0.520**	–0.476**	0.622**	1				
5.Total score of student-teacher relationship	0.832**	–0.770**	0.818**	0.773**	1			
6.Intrinsic motivation	0.416**	–0.269**	0.271**	0.353**	0.418**	1		
7.Extrinsic motivation	0.172*	0.034	0.115	0.079	0.108	0.339**	1	
8.Total score of learning motivation	0.342**	–0.123	0.225**	0.245**	0.300**	0.772**	0.860**	1

Note: *p<0.05, **p<0.01.

Table 5. Mediating model analysis

	Equation 1: learning motivation		Equation 2: student-teacher relationship		Equation 3: learning motivation	
	β	t	β	t	β	t
Parent-child relationship	0.222	3.650***	0.333	7.441***	0.123	1.843
Student-teacher relationship					0.297	3.245***
R^2	0.059***		0.208***		0.104***	
ΔR^2	0.055***		0.204***		0.096***	

Table 6. Test for the mediating effect

	Effect	Boot SE	Boot LLCI	Boot ULCI
Total effect	0.222	0.065	0.095	0.350
Direct effect	0.123	0.079	–0.032	0.278
Indirect effect	0.099	0.045	0.019	0.201

4. Discussion

4.1 Differences of Demographic Variables in Various Indicators

The father-child intimacy scores of boys are significantly higher than that of girls. Because the participants of the survey are in Grade 5 and Grade 6, as the senior students in primary school, boys tend to communicate more with their father on topics that men are more concerned about. Therefore, boys show a closer relationship with their father than girls.

The total scores of teacher-student relationship and learning motivation in Grade 5 were significantly lower than that in Grade 6. The Grade 6 is about to be promoted to the junior high school. With the expectation of academic performance, the learning motivation will be improved.

In terms of total score of parent-child relationship and the supporting score of teacher-student relationship, the single child is significantly higher than the non-single child. The only child gets all the love from his parents, and the parent-child relationship is relatively good, which may affect their perception of teachers' support.

In terms of total score of teacher-student relationship, intrinsic motivation score of learning motivation, and the total score of learning motivation, the scores of students who are class cadres are all significantly higher than those who are not class cadres. Students who are class cadres get more attention from teachers, so the teacher-student relationship and learning motivation are significantly higher than those who are not class cadres. In the primary schools, teachers can let more students serve as class cadres and provide positive guidance in order to promote the relationship between teachers and students and enhance students' learning motivation.

4.2 Correlations among Parent-Child Relationship, Teacher-Student Relationship and Learning Motivation

There was a significant correlation between parent-child relationship and teacher-student relationship ($p<0.01$): a significant negative correlation between conflicting and other indicators ($p<0.01$), and a significant positive correlation among other indicators ($p<0.01$). Pupils show consistency in their relationships with their parents and teachers.

In the relationship between parent-child relationship and learning motivation, except that there was no correlation between parent-child intimacy and external motivation, there was a significant positive correlation among other indicators ($p<0.05$). Father-child relationship was significantly correlated with internal motivation ($p<0.01$), but not with external motivation; Compared with the correlation with external motivation ($p<0.05$), the correlation between the mother-child relationship, total score of parent-child relationship and internal motivation are higher ($p<0.01$). In general, the better the parent-child relationship, the higher the learning motivation and vice versa.

In the relationship between student-teacher relationship and learning motivation, except that extrinsic motivation has no significant correlation with conflicting, supporting, satisfaction, and the total score of teacher-student relationship, and conflicting has no significant correlation with the total score of learning motivation, other indicators all have significant correlation ($p<0.05$). There was a significant negative correlation between conflicting and intimacy, supporting, satisfaction, total score of student-teacher relationship and intrinsic motivation ($p<0.01$), and there was a significant positive correlation among other indicators ($p<0.01$). From the results, there is a significant positive correlation between the teacher-student relationship and intrinsic motivation, the total score of motivation; Except the intimacy is significantly related to external motivation ($p<0.05$), other dimensions and total scores of teacher-student relationship are not related to external motivation. In general, the better the teacher-student relationship, the higher the motivation and vice versa.

4.3 The Influence of Parent-Child Relationship on Learning Motivation: The Mediating Role of Teacher-Student Relationship

Regression analysis shows that parent-child relationship significantly has a positive predictive effect on learning motivation and teacher-student relationship, and teacher-student relationship has a positive predictive effect on learning motivation. The communication and cooperation between family and school can enhance the parent-child intimacy, and effectively promote teacher-student relationship and learning motivation. At the same time, by improving the relationship between teachers and students, the learning motivation can be enhanced.

The mediating effect analysis shows that the teacher-student relationship plays a complete mediating role in the influence of parent-child relationship on learning motivation. Parent-child relationship affects the learning mo-

tivation by influencing the relationship between teachers and students. From this point, it is important to enhance the parent-child intimacy.

The relationship between family and school is one of the most basic and important social relationships in building a harmonious teacher-student relationship, and exerts an imperceptible influence on students. If parents have any complaint of teachers, it will directly or indirectly affect the formation of pupils' target-orientation motivation [18]. Therefore, schools need to build a good communication mechanism to enhance parent-child relationship and stimulate students' learning motivation. For teachers, in addition to the "hard power" of teaching ability, it's essential to pay attention to "soft power" of establishing a good teacher-student relationship and effectively avoiding the conflict between teachers and students, which have a great impact on the growth and development of primary school students.

4.4 Research Limitations and Prospects

The proportion of single-child in this study is 53.52%. In terms of the total score of parent-child relationship and the supporting score of teacher-student relationship, single-child is significantly higher than non-single-child. After the abolition of the single-child policy in China, as well as in countries that have not implemented the single-child policy in the world, it is necessary to conduct further research in order to test the similarities and differences of the research results.

The specific function direction of parent-child relationship and teacher-student relationship is also a subject worthy of further study. The following can be discussed by cross-lag analysis.

5. Conclusions

Through the research on the relationship between parent-child relationship, teacher-student relationship and learning motivation of pupils, the following conclusions can be drawn:

(1) The parent-child relationship of primary school students has a significant positive predictive effect on learning motivation.

(2) The teacher-student relationship of primary school students has a significant positive predictive effect on learning motivation.

(3) Parent-child relationship can promote the relationship between teachers and students, and then enhance pupils' learning motivation.

Declaration

We confirm that neither the manuscript nor any significant part of it is under consideration for publication elsewhere or has appeared elsewhere in a manner that could be construed as a prior or duplication of the same work.

Conflict of Interest

There is no conflict of interest.

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Contributorship

Yuzhu Ren: Responsible for literature review, data collection, data analysis and thesis writing.

Shixiang Liu: Responsible for overall design and thesis writing.

Informed Consent

We confirm that written consent was obtained from all participants prior to the study.

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ARTICLE

Illness Experiences among Chinese College Students: A Negotiation Process between Social Connections and Protection of Self-Image

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Abstract: This study explored the experience of illness in relation to self-image, biographical disruption, and the process of coping through semi-structured interviews with students of a university in China. Twelve students were recruited under three categories, having a physical chronic illness, mental health illness, and chronic multiple morbidities. In-depth interviews were conducted and content analyses were applied to their recordings to identify major themes and subordinate themes in the illness experience. Results showed a distorted sense of self and biographical disruptions in young adulthood were common, as reported by the respondents. Students tried to cope with these disruptions with both individual strengths and social support, but not always with positive results. Reconstruction of self, in the analysis of illness experiences, was found a crucial strategy in overcoming disruptions. Social support of evaluative nature facilitated the adoption of the reconstruction strategy. A network-building approach is recommended for student services in higher education whereas further research is necessary to understand the processes of self-reconstruction.

Keywords: Illness experience; Biographical disruption; Coping strategies; Higher education

1. Introduction

Around 300 million people suffer from chronic illness (CI) in China [1]. The 2020 statistics show that China's population has over 40million college students. One study revealed that among students of 5 universities in the city of Qiqihar, the rate of Chronic Disease was 22.36% (n=2469, female 24.71%, male 19.33%) [2]. Defined by the Center for Disease Control and Prevention of the United State, a chronic illness is one that lasts for at least 3 months and results in an overall decrease in quality of life [3]. Chronic illnesses, physical and mental, are accompanied by prolonged treatments, compromised daily activities, and increased psychological stress.

Over 20 percent of college students were estimated to have certain kinds of sicknesses, as reflected by the number of students requesting special accommodations [4-6]. Visible physical illnesses are perceived as more deserving of special privileges [7]. Students with other CIs less ob-

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servable, especially mental health problems, are neglected. College disability staffs might overlook the needs of students with chronic illness because they did not understand the fluctuated symptoms and unpredictable relapses caused by chronic illness [5]. However, population of students with mental illness is large. As Yang pointed out, the prevalent rate of college students mental disorder all over the world is about 10 to 30 percent. Moreover, a research conducted in a Chinse university revealed that mental disorder accounted for 50.5% among all kinds of illness that stopped students from completion of college study [8].

Students with CIs, compared with their healthy counterparts, had a lower health-related quality of life [9]. They are more likely to have depression and anxiety symptoms [10], a higher prevalence of suicidal ideation and attempts, greater financial difficulties because of the high cost of treatment, and a higher withdrawal rate from educational programs [11]. The invisibility of illnesses lowers their opportunities to receive materialistic and emotional support. The graduation rate of students with CIs was found to be 34% lower than those without [7].

Most universities have disability services and some of them cater also to the needs of students with chronic illnesses [12]. Students were provided with adaptations such as extended testing time and note-taking services. However, students with CI need more than academic leniency. Although in mainland China, counselling services were available in most of college, but it failed to fulfill the needs of students with mental illness due to limited scale and poor quality [13]. Even if services are provided, significant number of these students do not seek help [14,15] and refrain from disclosing their illnesses to college administration and other students [16]. Reasons given include feelings of shame and guilt, especial for those with mental illness. Complicated college administrative processes also distance them from services [17].

The aim of this study goes beyond the question of how chronic illnesses affect the personal as well as college life of students. More importantly, the research tries to explore how college students overcome the disruptions of chronic illnesses to achieve personal growth, academic fulfillment, and social connections. The study was conducted at one university in Zhuhai, China from which twelve students with CIs of physical and mental nature were interviewed to understand how they experienced their illness during college education. The subjects were conveniently sampled. Random sampling was not applied as students seldom disclose their problems openly and even if they were screened out by college administration, refusal to interviews seemed to be an easier choice. A generic approach without focusing on a specific kind of disease provided a more comprehensive notion of illness experience that is useful to students' affairs work [18].

2. Effects of and Remedies for Prolonged Sickness

2.1 Role of the Sick

Parson (1951) coined the term sick role to describe the situations when a person was exempted from social responsibilities but at the same time compelled to accept instructions, from people around him, particularly related to medical treatment [19]. As a result, individuals began to withdraw from social involvement and concealed their health problems to avoid discrimination [20]. Chronic illnesses then disrupt human development through erosion of social relationships and the inability to mobilize resources [21].

Delays in seeking help and not disclosing their illness in fear of further loss are common [22]. Students with CI exhibit tremendous anxieties because of mistrust of their symptoms from college staff and classmates [15]. The term, 'illness experience', adopted later reflects a change of study focus from "external structures" to "insider perspectives" [16].

2.2 Biographical Disruptions to the "Self"

A major development of illness experience theories was the concepts of biographical disruption and loss of control [19]. It refers to an impactful process caused by illnesses, negative basically, to self-concept [23]. Strauss (2007) proposed that the process of biographical disruption began with "the turning point", which provoked surprise, bitterness, confusion, tension, and/or " a feeling of defeat in his or her experience of self" [24].

Difficulties to engage in normative exploring activities such as work and relationships have confined college students from successful identity formation [25]. Most of them were dependent on family members for assistance on health-related issues and developed low self-esteem [26]. Chronic illness hinders the accomplishment of the identity formation task of a person, particularly during his college years [6,27]. For those with visible disabilities, there is prolonged adolescence characterized by change and exploration [28].

2.3 The Struggles to Cope

However, Charmaz (1983) and Frank (1993) both believed in "transcending loss", that students with CI will find their suffering a source of strength after they reconstructed their illness experience through "reflection",

"reassessment", and "redirection" [29,30]. Bury (1991) considered "coping", defined as a cognitive process through which the individual learns how to tolerate the effects of chronic illness, as possible [31]. Williams (1984) added that coping is a "feeling of personal worth" with a "sense of coherence" or "potency" gained from a "biographically disruptive experience of illness" [32]. Externalization, normalization, resource mobilization, and social support networks, are deemed as key elements in achieving successful coping [19].

2.4 Utilization of Individual Strengths

The illness narrative has acquired a key place in the discussion on illness experience [29]. For Charmaz (1983), illness narrative refers to a reconstruction of life experience and a sense of self [27]. William (1984) believed that people's attribution of their afflictions forms a process of "narrative reconstruction" in an attempt to repair their disrupted self and realign the past and present self with society [30].

Externalization of illness is a mental process through which the individual attributes the causes of sickness to physical reasons and not personal responsibility. Upon diagnosis of having a chronic illness, better informed medical knowledge may allow people to conceptualize the disease as separated from the individual's self and thus facilitate externalization [19]. Unfortunately, Bury also pointed out that realization of a medical situation might also fill the patient with fear, anxiety, and a sense of uncertainty.

Normalization is finding ways mentally to minimize the impacts of illness and integrating them into one's life [20,33,34]. By regarding the treatment regimen as "normal", individuals can reduce the effects of the disease on self and social self.

2.5 Mobilization of Social Supports

Resources Mobilization is to maximize the positive outcomes and maintain a hopeful attitude through personal and social resources [30]. Pranka (2018) concludes that these resources include emotional, instrumental, informative, and evaluative support [21].

Social supports of all kinds are conducive to the creation of a new identity and facilitate the closing of the biographical gap [21]. If social support is not available, attempts to mobilize external resources will fail, adding a sense of defeat to the person. Prompt and professional mental health support is definitely helpful for students with CI [25].

In the interviews conducted by Spencer et al. (2018), college students tended to posit the normal healthy self and downplayed the severity of their illness, as a "resistance strategy" to mitigate disruptions caused by chronic illness [15].

To summarize previous literature, the following points are observed:

i For college students with chronic illness, experiences of biographical disruptions are distressful because their identity exploration process was disrupted;

ii Coping in which the individual learns to tolerate the adverse effects of sickness and regain a feeling of personal worth and coherent self, is possible.

iii Coping methods of resource mobilization, individual strengths, and social support may help college students overcome disruptions and reconstruct a more positive identity.

With the above observations, there are a few questions unanswered for Chinese educators. First of all it is important to find out whether the same pattern of biological disruptions, that emphasizes very much about development of individual identify, occur due to prolonged illness among Chinese students who grow up in a culture that emphasized more the collective identity? Second, for Chinese students to overcome disruptions of identity development, which coping strategy is more effective in the Chinese setting?

3. Methodology

The aim of this study is two-folded. First to explore the biographical disruptions among Chinese students, which may be different from other places of the world due to traditional cultural influences and current societal situations. The second intention is to study how Chinese students handle such biographical disruptions through various types of coping strategies; what works and doesn't work for them. The study was conducted in the BNU-HKBU United International College situated in the city of Zhuhai, Guangdong, China. Subjects were conveniently sampled as the frame for random sampling was not available since students were not required to disclose their sicknesses to the college administration.

A generic approach without focusing on a specific kind of disease provided a more comprehensive notion of illness experience. However a purposeful inclusion of three major types of targets are included, that of physical chronic illness, mental illness and chronic multiple morbidities. Students with physical illnesses in most of the cases are different from those with mental illnesses in terms of visibility. They may suffer from stereotyping and prejudice. Behaviors of students with mental illnesses on the other, because of invisibility, will not be tolerated by their peer college students. Students with multiple morbidities may suffer more in terms of self-pity or a lower sense of self efficacy and thus find it more hopeless to cope.

Three questions were raised in the interviews namely:

i What kinds of biographical disruptions have illness brought to the students with chronic illness at the Case University, in terms of distorted self-identity and social relationships?
ii How did these students cope with biographical disruptions? Did they, as past theorists have observed, become passive and avoid social interactions, or did they actively face and solve the disruptions?
iii Which of the two coping strategies, mobilizing individual strengths or social supports, did Chinese college students employed in overcoming these biographical disruptions?

Interviews were recorded in detail with student consent. The recordings were then analysed according to the Four Stages Interpretive Phenomenological Analysis (IPA) proposed by Storey (2015) [35]. It is a qualitative approach commonly used that aims to explore detailed personal and lived experiences to obtain a subjective description of participant experience [36,37]. IPA of free flow semi-structured interviews made it possible for this study to review the complexity of illness experience as a difficult life event [38]. The four stages were as follows:

i Initial reading of the transcripts of the 12 interviews;
ii Identify and labelling themes;
iii Labeling themes and identify clusters;
iv Producing a summary table of superordinate themes.

Eventually, a recruitment notice was posed from November 2020 to January 2021, on student WeChat groups to invite volunteers with one or more chronic physical and mental illnesses for at least 3 months to participate in face-to-face interviews. There were fifteen respondents but only twelve met the criteria of chronic illness.

4. Results

4.1 Participants Information

The illness conditions of the twelve participants are shown in Table 1. Nine of them reported mental illnesses of which six were diagnosed with bipolar disorder. Only two suffered from physical illness. Three participants suffered from both physical and psychiatric problems in the form of multiple morbidities.

4.2 IPA: Identifications of Themes and Superordinate Themes

4.2.1 Biographical Disruptions to the "Self"

Body image, self-esteem, self-efficacy, and social self were asked in the interviews about how they were affected by chronic illness. Among four dimensions of self, the social self was reported to be influenced by the chronic illness in the most closely related and non-useful ways. Meanwhile, it was directly relevant to the participant's social interaction, so it was classified into a single theme: distorted social self.

According to the transcripts, other impacts on the self were mostly characterized by unstable, non-useful, and lost, summarized as four aspects of altered self-image. Themes and superordinate themes in the current part were presented in Table 2.

Table 1. Principal Diagnosis of Participants (n=12)

Participants (fake names)	Gender	Types of Illness	Diagnosed Disease(s)	First onset (Age)	Year of Sickness since Diagnosis
Ben	Male	Physical	Migraines	4	4
Nancy	Female	Physical	Atopic Eczema	7	13
Amanda	Female	Mental	Bipolar Disorder	5	2
Flora	Female	Mental	Bipolar Disorder	2	1
Mary	Female	Mental	Bipolar Disorder, Alcohol Abuse	5	1
Owen	Male	Mental	Bipolar Disorder	4	1
Petty	Female	Mental	Major Depressive Disorder	>2	2
Cindy	Female	Mental	Bipolar Disorder	2	2
Dorri	Female	Mental	Bipolar Disorder	3	3
Eva	Female	Multiple	Chronic Bronchitis	Unknown	Unknown
			Bipolar Disorder	4	<1
Queenie	Female	Multiple	Lumbar Disc Herniation	3	3
			Major Depressive Disorder	4	4
Rose	Female	Multiple	Heart Disease	9	9
			Anxiety disorder	1	1

4.2.2 Biographical Disruption to Social Interaction

Results showed that chronic illness caused severe disruption to participants' interactions with others. As presented in Table 3, participants carried many concerns about the chronic illness when they met others, and concerns disrupted their patterns of socialization.

Table 2. Superordinate Themes and Themes of Biographical Disruption to the "Self"

Superordinate Themes	Themes	Example of Illustrative Quotation
Altered self-image	Unstable Person: View of self changes often	"From then on, I have been jumping between arrogance and inferiority"
	Unworthy Person: Low self-esteem, self-efficiency, and/or low confidence in appearance most of the time	"At that time, all kinds of dissatisfaction. And then eventually got to the point where I felt like I wanted to hurt myself. That is, if it's so ugly, why not ruined?"
	Lost Person: The concept of self tends to be incomplete	"When you are in an awfully bad mood, your perception of yourself is incomplete, and you don't know what you are like at all..."
Distorted social self	Abnormal Person: People think my behavior or thought as unusual and difficult to understand	"…in summer I still wear long sleeves and long pants, and always wear a mask. Some people will find it very strange. I know it's difficult for them to understand. They can't feel how much pain it brings me. They think I just need to avoid dusty places, but you know dust is visible, and dust mites are actually invisible…"
	Vulnerable Person: Perceive different and more considerate treatment from others	"They became cautious when talking to me…"
	Untrustworthy Person: People think I am pretending	"When I was in high school, I didn't need to take any classes that involved lawns, and then some classmates thought I was very leisurely, relaxed, and happy, and they would gossip, as if I didn't want to take those classes, so deliberately claimed to be allergic…"
	Aggressive Person: People think I am scary or/and may attack others	"At the time when I was depressed and taking medications, one of my roommates told others that I would take medicine in the toilet every night and cried secretly. Then some people said to me later that they thought I was terrible at the time."

Note: Self-image and social self were defined by the APA Dictionary of Psychology

Table 3. Superordinate Themes and Themes of Biographical Disruption to Social Interaction

Superordinate Themes	Themes	Example of Illustrative Quotation
Inward Worrying about social interaction	Potential misunderstanding: Worry about embarrassment or discrimination	"I trusted our classmates, until one day, one of them complained about his friends X. X did not leave her boyfriend even if she had known that she might suffer from violence. And the so called 'might suffer from violence", referred to bipolar that the boy have. That classmate said those with bipolar not only hurt themselves, also hurt others… I never told others (my illness) since then."
Outward Worrying about social interaction	Potential harming: Worry about hurting others	"A good friend in the past, our relationship was trustful. I talked about myself. I just told her a bad dream of mine. Then I saw her eyes turn red. I had to stop. I could not keep talking that basket of bad things.
Difficult interpersonal relationships	Pessimistic views: Feel hard to make friends and/or build up an intimate relationship	"I have been looking for it, but always fail…I know there is no hope. Then I must rely on myself, do not think it all the time, like getting married and raising kids…"
	Distrustful relationships: Experience loss of a friend and/or instability in an intimate relationship	"Cannot bear any noise. Even whisper, makes me quite anxious... I might rage, do or say something…it's unbearable for Sometimes people just joking, but I feel terrible. Or just because of a word or an action, then, I'll think he hates me or something…Also those old friends, have been estranged."

4.2.3 Coping by Mobilizing Individual Resources

Coping strategies depending on the individual strengths were further classified into useful coping and non-useful coping based on participants' descriptions. Useful strategies are presented in Table 4a.

Themes of Non-Useful strategies were summarized in Table 4b.

4.2.4 Coping by Mobilizing Social Support

Besides individual resources, external resources also played important roles in coping with biographical disruptions. Some external inputs were perceived by participants as positive support, helping them to overcome biographical disruptions caused by the chronic illness. Useful supports considered by participants are listed in Table 5a.

Other inputs pushed participants away from successful coping. Table 5a summarizes those external inputs perceived by the participants as non-useful or called Negative Social Support in this paper.

4.2.5 Themes and Superordinate Themes Construct

To provide a visual presentation of the above tables, Figure 1a and Figure 1b below captured the relationships of concepts discussed so far.

Table 4a. Useful Utilization of Individual Strengths

Superordinate Themes	Themes	Example of Illustrative Quotation
Self-distraction	Divert attention by doing something else	"I go to exercise when I am in a bad mood…When I do exercise, my brain may not think too much. That state is better. But in fact, I feel that the more I rely on this thing to divert attention, on the contrary, I don't really enjoy it so much…"
Reconstruction	Reframe the illness experience and/or reconstruct a sense of self	"I have read a few articles saying that the only difference between mental illness and physical illness is that one affects your body and the other affects your brain. It is a bit like chronic bronchitis that I also have a little bit, so I just say that you take medicine, and it works on your mind. You may think so, but in fact, it is not your own. That is, you are you, it is brought to you by this disease, it does not belong to you. You should cure it, and It's not that you have to accept it and blend yourself with the disease.
Active-clarification	Explain the manifestation of symptoms	"If someone said: 'why you go to the toilet so frequently', then I will tell him, undoubtedly, due to my health problem. I will let him figure out why I be like this. Whether he care or not, is her problem. I think I have an obligation to do this."
Rationalization	Develop logical reasons to justify the behavior	"It's too tired to deal with some friends, so I give up, but I don't think it as a matter about the illness"

Table 4b. Non-useful Utilization of Individual Strengths

Superordinate Themes	Themes	Example of Illustrative Quotation
Avoidance	Disengage from situations with disruptions	"…I read books, to avoid… I just don't want to deal with things. I might just read books all day long and then refrain from reacting."
Over-controlling	Get a sense of control by self-harm	"Using knife is the most effective...sometimes because I'm too sad, I really want to scream, ah, it feels like crazy, but if you cream to a certain extent, you may feel that you can't scream any more, but you still want to scream, but the body can't keep up, so I need to help it. With a knife, I can calm down and transfer the pain to the skin, which will make me feel a lot more comfortable"
Suppression	Normalize behaviors and/or refrain from expressing real emotions and thoughts	"You feel that you are so down, that is, very down, that is, you feel that your body is sinking. Then someone tells you a joke, you still pretend to cheer up, just to cater to him or something …"

Table 5a. Useful Social Supports

Superordinate Themes	Themes	Example of Illustrative Quotation
A feeling of being cared about	Others' expressions of empathy, love, trust, and caring	"Some time ago, when I was stressful about my study, my mood fluctuated a little, my whole head was about to blow up. At this time, I just talked to my good friend, who knew my problem (the illness). He was like 'come out, let's take a walk'. I was so touched, crying while coming out. I can feel their kind of hard work. I mean they are willing to get closer when I am suffering that kind of emotion..."
Evaluative support (counseling)	Receiving Iinformation that is useful for self-evaluation	"She (the counselor) walked with me when I was in the dark. In fact, there were a lot of things that made me uncomfortable, or I thought I depressed because of many things that my parents didn't know about. He knew a lot ...Sometimes, I think it maybe a spiritual pillar for me."
Informative support	Advice, suggestions, and information	"(The role of knowledge) is still important. After all, even if it does not work sometimes, you will know what to do. When I feel it's going to attack me, I won't be as panic as it was. At least you know that you can get to sleep and take a painkiller. After three hours, you will be a fresh and lively boy."
Instrumental support	Tangible aid and service	"When I felt that I didn't have enough to go to college, she applied to the College for me, and there was another university that I could apply to. I knew that I had already got the offer before I had the college entrance examination. She gave me a lot of support."
Normalized treatment	Offer no special consideration because of the illness	"Treating me like I am a normal person would be the best support for me."

Table 5b. Non-useful Social Hindrance

Superordinate Themes	Themes	Example of Illustrative Quotation
Over concern from peers and family	Social support deteriorates disruption by psychologically distancing the self from others.	"The more they want to actively help me, the greater distance I feel between me and them. And this sense of distance will make me feel more and more powerless. Or it's like a positive and negative number. I was originally at a certain point in the negative value. They always wanted to help me get out of the negative value. The more they wanted to help me, the more they move towards larger integer."
Increased worries	Social support deteriorates disruption by bringing more worries.	"Seeking social support needs a lot of psychological preparation. I worry a lot about what happens after I seek help. Even though, it may be in vain…"

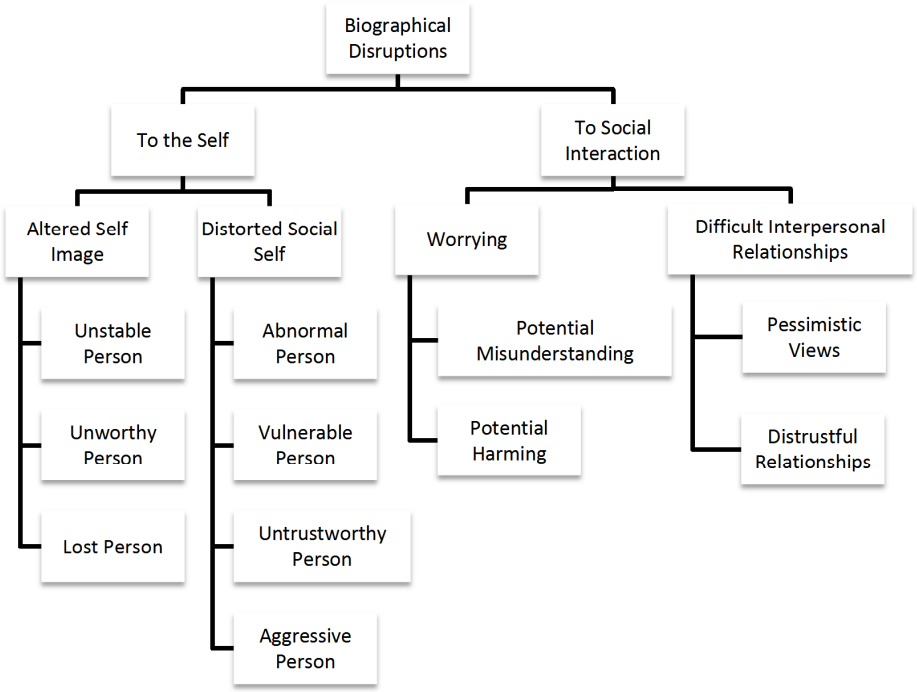

Figure 1a. Themes and Superordinate Themes of Biographical Disruptions

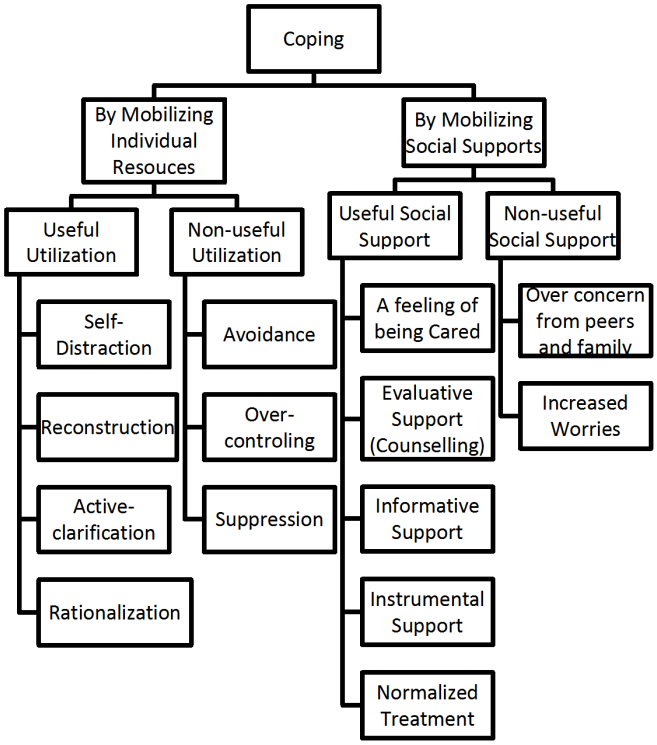

Figure 1b. Themes and Superordinate Themes of Coping

4.3 Frequency Report of the Themes

Impacts on Self were mentioned much more frequently than Impacts on Social Interaction. Frequencies of mentioning by participants of various Biographical Disruption themes were reported in Table 6. Most participants exhibited distorted self-image due to the chronic illness. This is consistent with theories about the developmental needs of young adulthood.

Table 6a. Report of Biographical Disruptions to Self

Superordinate Themes	Themes	Frequency
Altered self-image	Unstable	10
	Unworthy	15
	Lost	2
Distorted social self	Abnormal	6
	Vulnerable	4
	Untrustworthy	2
	Aggressive	1
Total		40

Table 6b. Report of Biographical Disruptions to Social Interactions

Superordinate Themes	Themes	Frequency
Worrying social interactions	Misunderstanding	4
	Harming	5
Difficult interpersonal relationships	Pessimistic views	4
	Disturbed relationships	4
Total		17

Individual Strengths and Social Support were mentioned by participants as helpful, 30 and 32 times respectively. Table 7 summarized the themes of Useful and Non-useful coping strategies as perceived by participants in this study. Coping by Reconstruction (20 mentions) was considered most useful. It was followed by Emotional support (14 mentions) and informative support (9 mentions).

Table 7. Mentions of More Useful Coping

Coping strategies	Superordinate themes	Frequency
Utilizing individual strengths	Self-distraction	3
	Reconstruction	20
	Active clarification	3
	Rationalization	4
Mobilizing social supports	Emotional support	14
	Evaluative support	4
	Informative support	9
	Instrumental support	3
	Equal treatment	2

On the other hand, some students expressed that some coping actions were not useful or even brought negative effects. These items were listed in Table 8.

In this study, most students coped with both individual strengths (30 mentions) and social support (32 mentions). The close margin between the two showed that the 12 students did not rely on any one of the two strategies. However, mobilization of both individuals (10 negative

comments) and social resources (9 negative comments) have created negative effects. It is important to note that both strategies have two-directional effects, useful and non-useful regarded by participants. The ratio of non-useful/useful mentioning for individual strengths was 10 to 30; and for social support, 9 to 32. Two participants reported the negative effects of informative support related to physical illness, as they have to face the hard reality of serious sickness. Inadequate information and overwhelming information were both detrimental to the patients at a stage before they can accept the sickness as part of life.

Table 8. Mentions of Non-useful Coping

Coping strategies	Superordinate themes	Frequency
Utilizing individual strength	Avoidance	6
	Over controlling (self-harm)	2
	Suppression	2
Mobilizing social support	Over concern from peers and family	3
	Increased worries	6

4.4 How does Reconstruction Work?

Reconstruction was frequently mentioned by participants, up to 20 times. Nancy's case can be an example of an illness narrative. She mentioned that her illness was a trial for her to exercise her willpower. She said: "Every time I went through the attack, it's just like I had defeated a boss so that I got the pass to the next step." Nancy compared her illness experience to a game. The sense of achievement gained after reconstruction gave her the courage and strength to face up to subsequent difficulties in her life.

Reading was used to facilitate reconstruction by Amanda, who described:

"Reading helps me understand that people have different perspectives. From my current perspective, I feel that I am so miserable, incurable. When I took a look at others who may be affected by alcoholism and drug addiction. They have become novelists. OK? Will understand a different world, a different concept. I feel that with these new concepts, I can keep moving on..."

Reading provided Amanda a chance to turn her "miserable" and 'incurable" self into a person filled with possibilities. It implanted hope into her life. Entertainment could also function in a similar way. Queenie said:

"When I'm in a bad mood, I watch stand-up comedy...and I'll think, oh, isn't life is exactly like this! It has a lot of positive effects on me..."

Inspired by stand-up comedy, Queenie attributed the pains caused by her illness to a normal experience. Stories and viewpoints presented in stand-up comedy normalized the dark side of her life. Illnesses were not regarded as a deviation from a "normal biography" anymore. Queenie's thought could also be interpreted as a rationalization of the difficulties. Flora externalized the negative comments she received for stereotypes towards people with mental illness, she said: "People are not rejecting me as myself, but aiming at the whole group with mental illness, people scare." They tried to overcome the barriers between their deviated self with chronic illness and their real self as a member of society.

By and large, participants persuade themselves through self-dialogue to undermine the negative effects of the sickness, avoid attributing the sickness to personal failure, and find new personal value. These would be more likely to overcome the disruptions caused by illnesses.

4.5 How Social Support Contributes to Reconstruction?

Among the twelve participants, there were 32 mentions of the importance of social support and nine of them suggested that they were able to reframe their illness experience with the help of social support. There were 9 mentions of gaining insights from informative support, for example, Eva and Flora. Eva explained:

I have read a few articles saying that the only difference between mental illness and physical illness is that one affects your body and the other affects your brain. It is a bit like chronic bronchitis that I also have a little bit, so I just say that you take medicine, and it works on your mind. You may think so, but in fact, it is not your own. That is, you are you. It is brought to you by this disease. It does not belong to you. You should cure it, and it's not that you have to accept it and blend yourself with the disease.

To reconstruct the "ill self", Eva externalized the mental illness based on what she learned from the papers. Like Eva, Flora adopted the concept of "self-awareness and acceptance" to deal with her disrupted "self". She described:

In the EI (Emotional Intelligence) class, it was mentioned that only with self-awareness and acceptance, withdrawal from a negative state of mind can be achieved. Only being affected, not controlled. People will get better when they make efforts. For example, after I go to university, I feel that the extreme situation has decreased.

Besides, with others acceptance and equal treatment, Queenie managed to utilize knowledge about health that she learned from her illness. She explained:

The best thing for me is to know that people really accept my ideas. If they ask me questions about fitness and diet, I will be more than happy to tell them. It's actually a very positive "hint" or regard to me. I know that I am sick

but I can still help other people to avoid getting sick.

Queenie described people's acceptance and curiosity about her illness as "a possible hint". She constructed an "appreciated person" by popularizing knowledge about health.

Opportunities for interacting with people having the same kind of illness set an example of how social support helps self-reconstruction. Talking about the influences of making friends with patients of similar illness, Amanda said:

Well, I think as long as it is not the kind of collective suicide attempt, I think the influences are positive... It gives me the courage to be my real self, which the so-called good girl usually will not do. They helped me break through those boundaries.

From Amanda's words, it seemed that turning to people with similar experiences not only expanded her social circle but also motivated her to pursue a life she longed for, instead of what society expected of her.

Counseling as evaluative support, with 4 positive mentions, offered opportunities for people to rebuild the concept of "self". Flora shared:

It helps me better understand some phenomena and establish a relatively stable cognition. I think it helps a lot.

Having bipolar disorder, Flora experienced psychological rides on a roller coaster, making it extremely difficult for her to stabilize her emotions. Counseling could help her find a "baseline", with which she improved her ability to appraise her situation. Although illness did not leave, she became more sophisticated in handling the disruptions it brought about.

4.6 How does Support Work?

This study recorded that most reconstructions come from social support. Social support played an important role in facilitating a reconstruction to overcome biographical disruption. From the above descriptions of illness experiences by students the following key factors are observable:

4.6.1 Social Company and Care

When students were suffering from the difficult times, family and peer support were important in providing daily care and concern.

4.6.2 Social Comparison and Self-acceptance

Giving Students with CIs opportunities to interact with others, mostly schoolmates, in this case, allowed them to learn that people have different perspectives. They no longer found their own situations lifeless, miserable, and actually, quite common among other people.

4.6.3 Social Recognition and Status

Some students become experts on their own sicknesses and begin to promote health knowledge. Obviously, in the process of mutual exchange, there were positive social regards and social appreciation towards those students who shared their personal direct experiences.

4.6.4 Social Transformation and Socially Defined Life Meaning

Social interactions allow students to find their talents, like and dislike, and their meaning in life. Being contributive to the social circles around an individual is always a transformative experience. It enables one to withstand physical and mental distresses.

It is important to interpret these findings according to the research design strengths and weaknesses of this study. One major strength of this qualitative design was interviewees' strong motivation to express their difficulties and stories. Another strength was the genuineness of the findings as the researcher has the trust from the interviewees who were providing the information on a voluntary basis. The major weakness of this study was a small sample size coming from a single university thus the findings should not be over-generalized.

Also convenient sampling with researcher's personal WeChat might create sampling bias, affecting external validity of the study.

5. Discussion

Kralik (2002) found that knowledge was important for regaining a sense of mastery and reconstructing a sense of self, and reconstruction was an indispensable transitional process of resilience that helped people transcend disruption brought about by illness [39]. For youngsters with chronic illnesses, Mathieson and Stam (1995) suggested that restructuring the self, renegotiating identities, and reframing biographies are particularly necessary to learn in order to maintain meanings of life under disruption of chronic illness [40].

This study showed that Chinese students also experienced significant biographical distortions during illness. This is consistent with theories about the developmental needs of young adulthood. Distortions toward self were the major concern for participants rather than social interactions. A substantial number, 6 out of 12 participants reported that they have overcome these biographical disruptions. They achieved their success through both individual strengths and social support.

It is different from previous studies which found students as avoidant who did not seek help. A new generation of students with CIs has broken the stereotypes of passive patients. Many of them have attempted reconstruction, with mobilizations of emotional support, informative support, and evaluative support. One minor observation is that they seldom cope with externalized aggression.

Mobilization of individual strengths is a process of self-dialogue and narrative reconstruction, while mobilization of social support is a process of social comparison, social learning, and social recognition. Finding the social meaning of life and redefining the "self" concept, together, forms a process of social transformation. Moreover, the mobilization of individual strengths and social resources was not the only process. Social supports were contributive to reconstruction. To what extent social support is an antecedent variable to recovery through reconstruction, has yet to be examined.

An illness-friendly campus could be created by popularizing knowledge about chronic illness. Health knowledge can reduce public misunderstanding and discrimination, thus minimizing disruptions to self and social relationships. Mutual support mechanisms and professional counseling services are crucial to help students unlock biographical disruptions. Students with CIs naturally look towards their colleges to provide informative, emotional, and evaluative social support. Last but not least, self-healing has a powerful presence. Half of the students were capable of overcoming disruptions and achieving satisfactory academic results. All they need is an illness-friendly campus.

Conflict of Interest

There are no financial or non-financial interests that are directly or indirectly related to the work submitted for publication.

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ARTICLE

Stress Resilience as a Tool to Combat the COVID-19 Pandemic

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Abstract: The COVID-19 pandemic has not only affected the world in terms of their physical health but has also been a strain on our mental well-being. Individuals who have showcased the tendency to bounce back from this situation have been real survivors of this pandemic. With this background in mind, this research aimed to study the gender differences and age differences in stress resilience. The Stress Resiliency Profile by Thomas and Tymon (1992), Jr. was used for this purpose. An equal number of males and females (n=60; N=120) were evaluated for the study. To assess the age differences, the participants were divided into two age groups: 15-22 years and 22-30 years of age. There were an equal number of individuals in each group (n=60, N=120). The subjects were assessed on the three dimensions of Stress Resiliency Profile-Necessitating, Skill Recognition and Deficiency Focusing. Results indicated significant differences in the Deficiency Focusing dimension among males and females. In the age difference evaluation, significant differences were found in the Skill Recognition dimension. The findings have been discussed within the framework of previous research. The current research findings have significant implications for the study of stress and resilience.

Keywords: Pandemic; Stress resilience; Gender difference; Age difference

1. Introduction

The Wuhan Municipal Health Commission in China reported multiple cases of pneumonia on December 31, 2019. This pneumonia was later identified as SARS-CoV-2, coronavirus. WHO later announced it as the COVID-19 pandemic on March 11, 2020 [1].

The negative psychological implications have not only been reported by the frontline workers, but also by the general population.

Stress has been a major component of examining the adversity of the pandemic. In the lieu of the severity of the pandemic, various governments issued guidelines to administer social distancing and hygiene, however, seeking social support stands as the most adaptive way to cope with stress [2].

Adverse stimuli have a strong connection with the consequences of stress [3] and the 4 major pathways to process any adversity is labelled as establishing and maintaining self-esteem and self-efficacy, exploring new opportunities, reducing the negative chain reaction and risk impact [4].

Various studies have emphasised the importance of

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resilience as a tool to improve personal development and attain a better quality of life [5] and the orientation of the students pursuing their degrees at a university [6].

Although various factors may be difficult to study in animals, various psychological and social factors have been associated with the development and establishment of resilience [7].

Resilience

A personal quality that helps individuals face adversity and adapt to sudden circumstances and changes is what represents resilience [8].

Resilience research has always been emphasised as finding its meaning in positive adaptation [9]. It has always been after certain pioneering research that emphasis has been put on raising children and youngsters are resilient beings [10].

The course of resilient studies has found a major shift from identifying protective factors to examining how a person would overcome adverse situations, and examining the role of psychosocial determinants of resilience in trauma-exposed individuals [11-13].

Many believe that stress resilience has two elements in common- adversity and positive adaptation [14]. It was found that resilience studies have 4 aspects: pre-adversity, the adversity itself, post-adversity and the predictors of resilient outcomes [13].

Empirical research established three critical conditions in the conceptualisation of resilience-finding oneself in adversity, internal and external protective factors, and adapting positively to the adversity [6].

The various psychosocial factors that have found their contributions to resilience are active coping, prosocial behaviours, cognitive reappraisal, and social support [15-18]. Social support has been an extremely pertinent protective factor/element that facilitates the well-being of a family, quality of parenting and resilience among children [19].

Research indicates that a considerable amount of importance needs to be given to interventions that promote resilience. These should address the policies and programs that target the enhancement and establishment of protective factors that span across home and school environments [20-22].

Studies show that safe and nurturing homes and supportive parent-child relationships help in the development of higher levels of self-esteem, self-efficacy and formation of positive self-identity [23-25]. There is also evidence that proves that if parents have their psychosocial needs met, they tend to be more effective in their roles as caregivers [26,27].

It is believed that men and women are socialised differently and play different roles in their lives thereafter, behavioural genetic research does not take one's sex as an environmental moderator. One's biological sex acts as a representative of the environment men and women are socialised. Their sex acts as an enabler of resilience amongst men and restricts resilience building amongst women. This is also evident in depression studies where the heritability of depression is 30% among girls and not relevant enough among boys [28].

Hence, both gender and age play a crucial role in determining how an individual deals with various stressors in life. The pandemic gave individuals unprecedented amounts of strain. As per research, individuals with high resilience levels were the only ones who were able to bounce back.

2. Aim and Hypotheses

With this background in mind, the purpose of the current study is to find:

- -To assess gender differences in stress resilience during the COVID-19 pandemic.
- -To assess age difference in stress resilience during the COVID-19 pandemic.

Based on the review of literature, the following hypotheses were proposed:

- -Males would score higher on stress resiliency as compared to their female counterparts.
- -Participants in the older age group would score higher on stress resiliency as compared to younger individuals.

3. Methodology

3.1 Sample

A total number of 230 questionnaires were sent to males and females falling in the age bracket of 15 to 30 years, out of which 196 were received. 34 out of 196 questionnaires were found to be incomplete and were not eligible for further analysis. Out of the remaining 162 questionnaires, 120 were selected, 60 representing the males and females above the age of 22 and 60 representing males and females below the age of 22. Individuals belonging to the northern states of India (Panjab, Haryana, Himachal Pradesh, Chandigarh, and Delhi) were approached for the current research. The sample consisted of individuals pursuing their higher education (ages 15-22) and/ or young adults in the early stage of their career (ages 23-30). Individuals falling outside the set age bracket were ruled out from constituting the sample.

3.2 Design

The study aimed to analyse the gender differences and

age differences in stress resilience to combat the COVID-19 pandemic using the Stress Resiliency Profile. The data for the current research were collected using google forms. Responses were arranged and scored according to the instructions in the manual. Scores were calculated, tabulated, and interpreted to find the significant differences in scores of males and females falling in the age bracket of 15 to 30 years; and age differences between individuals below the age of 22 and above the age of 22 using - way ANOVA for all the three sub-dimensions of the Stress Resiliency Profile. The three dimensions are- deficiency focusing, necessitating and skill recognition.

3.3 Tools Used

- **Stress resiliency profile (Kenneth W. Thomas and WalteR G. Tymon, JR, 1992)**

Stress is a complex condition which involves 3 different kinds of events

1) Stressful events in the environments
2) Events in our minds as we try to interpret and cope with those stressors
3) Physiological events in your body (inclusive of tension, fatigue, and other symptoms of strain).

Stress occurs when people perceive their events are placing excessive demands upon them. The degree of stress experienced depends on one's perception. Perception determines whether a given situation is experienced as an 'excessive demand' at all as opposed to a challenging task or even an opportunity.

These perceptions depend upon the way one goes about interpreting the facts of the situation. Our research has identified three specific thought patterns or 'interpretive habits' which influence stress: deficiency focusing, necessitating and low skill recognition.

The three interpretive habits will be discussed in order of their importance. While all three contribute to stress, research shows that the deficiency focusing has the strongest and most persistent effect on stress, followed by necessitating and then low skill recognition.

I. DEFICIENCY FOCUSING: This is the habit of focusing on the negatives at the expense of the positive.
II. NECESSITATING: This occurs when we think it is necessary or imperative that we do something/ that we 'need to' or 'have to do a certain task.
III. LOW SKILL RECOGNITION: This refers to a tendency for us not to recognise the role of our abilities in producing our successes.

This scale is a self-administering questionnaire composed of 18 statements. Each individual is expected to choose a number from 1 to 7 that best describes how strongly they disagree or agree with a statement.

Statement number(s) 2, 6, 9, 11, 13 and 16 are for Deficiency Focusing dimension.

Statement number(s) 3, 5, 7, 10, 15 and 17 are for Necessitating.

Statement number(s) 1, 4, 8, 12, 14 and 18 are for Skill Recognition.

Items are based on 7 - a point Likert rating scale (1 - strongly disagree to 7 - strongly agree). Cronbach alpha is 0.87, 0.74, and 0.85, for deficiency focusing, necessitating and skill recognition respectively.

4. Results

Table 1 shows the Mean and Standard Deviation for Males and Females in the three dimensions of the Stress Resiliency Profile.

The mean for males in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 24.9, 27.97, and 30.68 respectively. The SD for the same came out to be 6.36, 3.83 and 2.75 respectively.

The mean for females in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 27.97, 29.93 and 30.1 respectively. The SD for the same came out to be 3.93, 4.97 and 3.2 respectively.

Tables 1.1, 1.2 and 1.3 show the one-way ANOVA calculations for the total scores of males and females in Deficiency Focusing, Necessitating and Skill Recognition dimensions respectively.

The difference between the mean score of females (M= 27.97) for the deficiency focusing dimension was higher than that of males (M= 24.9) and this difference was found to be significant ($F\{1,118\} = 19.054$, $p<0.01$).

As can be seen from the other table F values, none of the other values in the other dimensions came out to be significant.

Table 2 shows the Mean and Standard Deviation for individuals below and above 22 years of age in the three dimensions of the Stress Resiliency Profile.

The mean for individuals above the age of 22 in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 26.15, 29.55 and 30.43 respectively. The SD for the same came out to be 5.12, 3.81 and 2.91 respectively.

The mean for individuals above the age of 22 in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 25.32, 28.72 and 31.53 respectively. The SD for the same came out to be 5.71, 4.39 and 2.56 respectively.

Tables 2.1, 2.2 and 2.3 show the one-way ANOVA for the total scores of individuals in 15-22 years and 22-30 years of age for Deficiency Focusing, Necessitating and

Skill Recognition dimensions of Stress Resiliency respectively.

The difference between the mean score of individuals above the age of 22 (M= 31.53) for the skill recognition dimension was higher than that of individuals below the age of 22 (M= 30.43) and this difference was found to be significant (F {1,118}= 122.033, p<0.01).

As can be seen from the other F values, none of the other values in the other dimensions came out to be significant.

Table 1. The Mean and SD of males and females in the three dimensions of Stress Resiliency.

		DEFICIENCY FOCUSING	NECESSITATING	SKILL RECOGNITION
MALES	MEAN	24.9	27.97	30.68
	SD	6.36	3.83	2.75
FEMALES	MEAN	27.97	29.93	30.1
	SD	3.93	4.97	3.2

Table 1.1 The one-way ANOVA for Males and Females in Deficiency Focusing on Stress Resiliency.

SOURCE OF VARIATION	**SUM OF SQUARES**	**DEGREES OF FREEDOM**	**MS**	**F**
Between	282.133	1	282.133	19.054**
Within	1747.334	118	14.807	
***** F .99 (1,118)= 6.84***				

Table 1.2 The one-way ANOVA for Males and Females in Necessitating dimension of Stress Resiliency.

SOURCE OF VARIATION	**SUM OF SQUARES**	**DEGREES OF FREEDOM**	**MS**	**F**
Between	116.032	1	116.032	5.902
Within	2319.668	118	19.658	

Table 1.3 The one-way ANOVA for Males and Females in the Skill Recognition dimension of Stress Resiliency.

SOURCE OF VARIATION	**SUM OF SQUARES**	**DEGREES OF FREEDOM**	**MS**	**F**
Between	10.208	1	10.208	1.144
Within	1052.884	118	8.918	

Table 2. The Mean and SD of individuals in the 15-22 years and 22-30 years age group in the three dimensions of Stress Resiliency.

		DEFICIENCY FOCUSING	NECESSITATING	SKILL RECOGNITION
BELOW 22	MEAN	26.15	29.55	30.43
	SD	5.12	3.81	2.91
22 & ABOVE	MEAN	25.32	28.72	31.53
	SD	5.71	4.39	2.56

Table 2.1 The one-way ANOVA for Age Difference in Deficiency Focusing dimension of Stress Resiliency.

SOURCE OF VARIATION	**SUM OF SQUARES**	**DEGREES OF FREEDOM**	**MS**	**F**
Between	20.833	1	20.833	0.707
Within	3472.634	118	29.429	

Table 2.2 The one-way ANOVA for Age Difference in Necessitating dimension of Stress Resiliency.

SOURCE OF VARIATION	**SUM OF SQUARES**	**DEGREES OF FREEDOM**	**MS**	**F**
Between	20.833	1	20.833	1.232
Within	1995.034	118	16.907	

Table 2.3 The one-way ANOVA for Age Difference in Skill Recognition dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	917.467	1	917.467	122.003**
Within	887.468	118	7.520	
***F.99 (1,118)= 6.84*				

5. Discussion

The computed value of F exceeded the critical value of F at df (1,118) for the Deficiency Focusing dimension in the gender difference outcome. The results show that females scored higher than men in the dimension of deficiency focusing and there was a significant difference in the difference. The deficiency Focusing dimension has been explained as the habit of focusing on the negatives at the expense of the positives. High scores on the Deficiency focusing scale are regarded as a sign of predisposing oneself to stress at a high level. The dangers and shortcomings of life seem to be the centre of life's attention for females resulting in unnecessary distress.

In the age difference category, the computed value of F exceeded the critical value of F at df (1,118) in the skill recognition dimension. Results indicated that individuals above the age of 22 scored higher than individuals below the age of 22 in this dimension, and the difference was found to be significant. Low skill recognition scores indicate an individual's failure to attribute their success to their capabilities. Individuals who score high on skill recognition turn out to be the most resilient persons.

Research indicates that the effects of the pandemic on stress were higher amongst women in the Italian population [29]. In context to the Australian population too, women were said to suffer from higher levels of stress due to the ongoing pandemic [30]. Women, young people and individuals who lost their jobs have shown negative psychological symptoms and higher levels of stress than the general population [31]. In another research conducted among the Spanish population, women and children were said to be the most stressed individuals in the lieu of the pandemic [32].

The outcome of the study also indicates that most individuals who fall under the age of 22 were school and university students. Various studies show that resilience is an important tool to improve the quality of life and enhance the personal development of university students [5] UNESCO and OECD emphasise the role of inner and interpersonal skill development to enhance resilience and coping strategies to combat stress. This would also improve the emotional management component [33,34].

Age and qualification have also been positively correlated with stress resilience [35]. These coping strategies tend to help stop unpleasant emotions and thoughts and adopt a more problem-focused strategy to reduce the impact of stress [36]. It has also been seen that concentrating more on the information surrounding the current pandemic leads to higher psychological distress [37].

6. Strengths and Limitations

Dealing with the repercussions of the pandemic has been challenging for individuals regardless of their age, race, sex or ethnic background. The current study has a limited scope as far as studying the impact of the pandemic on age-related consequences is concerned. There is also a lack of clarity in the age bifurcations and the various roles that are challenged as one progresses in the age cycle. Regardless of these limitations, this research works as a motivator for any future review and study in the field of human resilience. This study also reveals the role of one's gender in determining their strength. The findings have been discussed within the framework of previous research. The current research findings have significant implications for the study of stress and resilience.

7. Conclusions

The current research findings have significant implications for the study of stress and resilience. Resilience acts as an extremely purposive tool when individuals are made to face extreme or minute adversities of life. In its contribution to overall well-being, it is important to note that having a resilient personality gives room for higher levels of self-positive behaviours and self-esteem to flourish. The results show that younger individuals have lower levels of resilience than females. Since being exposed to positive and nurturing social environments has a positive impact on well-being across developmental stages and into adulthood, younger generations should be fostered in highly facilitating environments which help in the development of a resilient personality. A positive family environment and positive surroundings are pertinent features in this aspect.

Conflict of Interest

There are no financial or non-financial interests that are directly or indirectly related to the work submitted for publication.

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ARTICLE

Construction and Initial Structure of Sexual Dysfunctions Tendencies Measure

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Abstract: Disclosure of sexual dysfunctions is difficult due to shame and social stigma. The instruments to measure sexual dysfunctions so far were quite backdated and lengthy. Moreover, there was no specific instrument available that could evaluate all the sexual dysfunctions on the Diagnostic and Statistical Manual of Mental Disorders' criteria in a single scale; separate for men and women. The objective to develop the scale was to provide the non-clinical population with a short and straight-forward measure in English which could help them in deciding about seeking professional help. The constructed scale comprised of 7 items for males and 7 for females and employed 6-points Likert scale for responses. The study involved 79 men and 105 women (N=184; Kaiser-Meyer-Olkin Measure of Sample Adequacy=0.682 for males and 0.618 for females). The inclusion criteria were the practical involvement of the participants in sexual practices and ability to respond to a questionnaire in English. Exploratory Factor Analysis was conducted to measure the reliability and validity of the scale. While employing Principal Component Analysis for extraction and Oblimin with Kaiser Normalization as Rotation, Exploratory Factor Analysis was conducted on 7 items for males and 7 items for females separately. Sampling adequacy was found good and the adequacy of correlations between items and was found highly significant. The Cronbach's Alpha reliability was satisfactory. 4 factors were extracted for males with 78.65% variance explained. 3 factors were extracted for females with 66.57% variance explained. The communalities for all the 14 items ranged between 0.554 to 0.937. The study established that Sexual Dysfunctions Tendencies Measure is a valid and reliable tool to measure sexual dysfunctions with the criteria of the Diagnostic and Statistical Manual of Mental Disorders.

Keywords: Sexual dysfunctions; Sexuality; Scale

1. Introduction

Sexual Dysfunctions, as described by the Diagnostic and Statistical Manual of Mental Disorders [1] are any disruptions or difficulties in the sexual response cycle which relate to alterations in the psychophysiological functioning and sexual desires of men and women. Erectile Disorder, Male Hypoactive Sexual Desire Disorder, Premature Ejaculation, and Delayed Ejaculation are the sexual dysfunctions of men included in the DSM-V. The sexual dysfunctions of women in the DSM-V include Female Orgasmic Disorder, Female Sexual Interest/Arousal

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Disorder, and Genito-Pelvic Pain/Penetration Disorder.

According to DSM-V [1] Erectile disorder is a difficulty in maintaining and obtaining erection and decrease in rigidity of penis. Male Hypoactive Sexual Desire Disorder is reduced or absent sexual/erotic thoughts or fantasies and less sexual appetite. Premature Ejaculation is a consistent or repeated ejaculatory pattern in which the person ejaculates within one minute after penetration and that is against his wish. Delayed Ejaculation is a significant delay or absence in ejaculation that must be experienced on all or nearly all incidents of sexual activity and is against the individual's wish. Female Orgasmic Disorder is a significant delay or absence in ejaculation that must be experienced on all or nearly all incidents of sexual activity. Female Sexual Interest/Arousal Disorder is a decreased or absent interest or arousal in sexual activity. Genito-Pelvic Pain/Penetration Disorder is a continuous or recurring difficulty in vaginal penetration or significant vulvo-vaginal/pelvic pain during intercourse. The DSM-V also mentions that these symptoms should persist for at least 6 months' period causing a noticeable distress in the individual and should not be due to another mental disorder that is not sexual in nature. It must also be assessed that the disorder is not a result of relationship discord or due to drug abuse. Furthermore, the symptoms could be life-long, i.e. present since the person became sexually active or acquired which means that the problem rose after normal sexual functioning. Similarly, DSM-V also states generalized and situational specifiers that assess if the disorder is confined or not confined to specific situations, stimulations, or partner. It also requires specifying the current severity of the disorder. Additionally, it argues that the assessment by the clinician must consider factors such as age and socio-cultural environment of the individual before making a diagnosis.

Apart from the DSM-V as an instrument itself to diagnose sexual dysfunctions, there was no specific self-respondent instrument available that could evaluate all the sexual dysfunctions on the DSM-V criteria in a single scale; separate for men and women. The literature suggested some earlier scales which claim to measure specific sexual dysfunctions individually. These scales included The Sexual Satisfaction Questionnaire [2], International Index of Erectile Function [3], Quality of Erection Questionnaire [4], Derogatis Sexual Function Inventory [5], Female Sexual Function Questionnaire [6], Female Sexual Function Index [7], and The Golombok-Rust Inventory of Sexual Satisfaction [8]. In many cultures, people do not have adequate knowledge on mental health related problems [9] and hesitate to discuss their sexual problems with others, including medical doctors, psychiatrists, and Clinical Psychologists [10]. Frequent consumption of porn, on the other hand, plays a vital role in developing sexual concerns [11]. There was a need to develop a latest and user friendly self-respondent scale which could guide the respondent for any possible tendencies to have sexual dysfunctions so that the respondent could further decide about seeking professional advice. The authors, therefore, developed and initially validated Sexual Dysfunctions Tendencies Measure (SDTM).

2. Method

2.1 The Instrument

Sexual Dysfunctions Tendencies Measure (SDTM), a newly developed scale to measure the possibilities of having any sexual dysfunctions, is the main instrument of the study. It was developed on the bases of DSM-V's criteria to diagnose sexual dysfunctions in men and women. The shortness of the instrument was the main feature so that the respondents could do it easily. The objective to develop such an instrument was to provide the non-clinical population with a short and straight-forward measure which could help them in deciding on seeking professional consultancy. 7 items for males and 7 items for females (Table 3) were constructed in English. These items covered all the sexual dysfunctions in DSM-V, both for men and women i.e. Erectile Disorder, Male Hypoactive Sexual Desire Disorder, Premature Ejaculation, Delayed Ejaculation, Female Orgasmic Disorder, Female Sexual Interest/Arousal Disorder, and Genito-Pelvic Pain/Penetration Disorder. The response format was 6-points Likert scale including Never, Rarely, Not Sure, Sometimes, Most of the times, and Always. The scale for men was labeled as Sexual Dysfunctions Tendencies Measure (SDTM-M) and the scale for women was named as Sexual Dysfunctions Tendencies Measure (SDTM-F). The instructions of the scale required the respondents to keep the last 6 months in mind while giving their responses. The items were shown to a panel of 5 Clinical Psychologists who positively correlated the items with the symptoms of sexual dysfunctions mentioned in the DSM-V. The scale was then administered on 5 men and 5 women to see any linguistic ambiguities. These 10 respondents found the language very easy to understand. The mean scores obtained through the scale and/or its sub-scales could interpret sexual dysfunctions as 1.0 – 1.9 = Not at all present; 2.0 – 2.9 = Rarely Present; 3.0 – 3.9 = Doubtable to be Present; 4.0 – 4.9 = Somewhat Present; 5.0 – 5.9 = Moderately Present; 6.0 = Severely Present.

2.2 Participants

The study involved 210 purposively selected adult participants i.e. 105 men and 105 women. The inclusion criterion was the practical involvement in sexual activities regardless of their marital status. People who did not have any sexual encounters were excluded from the study. Literacy i.e. to understand and respond to items in English, was the second criterion for inclusion. The responses of 26 male participants were discarded later while cleansing the data. The study thus involved 79 men and 105 women (N=184).

2.3 Procedure

The researchers approached the participants of the study individually while visiting different educational institutions and public offices. The participants were informed about the purpose of the study and their consent to participate in the study was appropriately taken. They were involved in a brief discussion to inquire about their sexual life and linguistic abilities, so that the validity of their selection in the study could be established. They were assured for the confidentiality of the data and were thanked for their participation.

2.4 Analysis

The data gathered was recorded in the Statistical Package for Social Sciences. It was cleaned by analyzing missing values, unengaged responses, outliers, linearity, homoscedasticity, multicollinearity, skewness, and kurtosis. 26 participants, whose data was not appropriate on the aforesaid grounds, were discarded. Exploratory Factor Analysis was conducted to measure the reliability and validity of the scale.

3. Findings

Exploratory Factor Analysis was conducted on 7 items for males and 7 items for females separately. Principal Component Analysis was employed for extraction. The Rotation Method was Oblimin with Kaiser Normalization. Sampling adequacy, by using Kaiser-Meyer-Olkin's values [12] was found good for both SDTM-M (Table 1; KMO=0.682) and SDTM-F (Table 1; KMO=0.618). Bartlett's test of sphericity [13] was used to analyze the adequacy of correlations between items and was found highly significant for both SDTM-M (Table 1; BTS=89.05; p=0.000) and SDTM-F (Table 1; BTS=115.47; p=0.000). The Cronbach's Alpha reliability for both SDTM-M (Table 1; α=0.66) and SDTM-F (Table 1; α=0.64) was satisfactory. 4 factors were extracted for SDTM-M with 78.65% variance explained (Table 1). 3 factors were extracted for SDTM-F with 66.57% variance explained (Table 1). The communalities for all the 14 items ranged between 0.554 to 0.937 (Table 3), thus acceptable as all were above 0.4 [14]. The Factor Structure for SDTM-M (Table 2) revealed 4 factors based on which the original item numbers were re-numbered to give a better sequence to the scale. According to the adjusted numbering sequence, M1 was loaded for Delayed Ejaculation; items M2, M3 and M4 were loaded for Erectile Disorder; items M5 and M6 were loaded for Male Hypoactive Sexual Desire Disorder; and item M7 was loaded for Premature Ejaculation. The Factor Structure for SDTM-F (Table 2) revealed 3 factors based on which the original item numbers were re-numbered to give a better sequence to the scale. According to the adjusted numbering sequence, items F1, F2 and F3 were loaded for Female Orgasmic Disorder; items F4 and F5 were loaded for Female Sexual Interest/Arousal Disorder; and items F6 and F7 were loaded for Genito-Pelvic Pain/Penetration Disorder. Item-Total and Item-Scale correlations for all the 14 items were found highly significant (Table 3) at the 0.01 level. Items for SDTM-M and SDTM-F are reported in Table 3.

The additional findings of the study reported (Table 4) a significant difference (p=.010) between sexual dysfunction in men (M=2.36; SD=0.82) and women (M=2.69; SD=0.81) whereas women had significantly higher scores on sexual dysfunctions than men. These scores, while interpreted through means (Table 5) revealed that the understudied men and women did not have any serious signs for having sexual dysfunctions except the possibility of pre-mature ejaculation in men.

Table 1. Reliability and Data Accuracy of Sexual Dysfunctions Tendencies Measure (SDTM)

Scale	N	α	KMO	BTS	Components Extracted	Variance Explained (%)
SDTM-M	7	0.66	0.682	89.05*	4	78.65
SDTM-F	7	0.64	0.618	115.47*	3	66.57

N=Number of items; *a*= Cronbach's Alpha; KMO=Kaiser-Meyer-Olkin Measure of Sample Adequacy;

BTS= Bartlett's Test of Sphericity; *P=.000

SDTM-M= Sexual Dysfunctions Tendencies Measure for Males; SDTM-F= Sexual Dysfunctions Tendencies Measure for Females

Table 2. Factor Structure of Sexual Dysfunctions Tendencies Measure (SDTM)

Item	SDTM-M Components				SDTM-F Components			
	DE	ED	MHSDD	PE	Item	FOD	FSI/AD	GPPPD
M1	0.967				F1	0.736		
M2		0.725			F2	0.808		
M3		0.363			F3	0.589		
M4		0.739			F4		0.837	
M5			0.925		F5		0.588	
M6			0.342		F6			0.819
M7				0.890	F7			0.852

Extraction Method: Principal Component Analysis; Rotation Method: Oblimin with Kaiser Normalization.

SDTM-M= Sexual Dysfunctions Tendencies Measure for Males; SDTM-F= Sexual Dysfunctions Tendencies Measure for Females; DE=Delayed Ejaculation; ED=Erectile Disorder; MHSDD=Male Hypoactive Sexual Desire Disorder; PE=Premature Ejaculation FOD=Female Orgasmic Disorder; FSI/AD=Female Sexual Interest/ Arousal Disorder; GPPPD=Genito-Pelvic Pain/ Penetration Disorder.

Table 3. Communalities, Total Item and Item Scale correlations for Sexual Dysfunctions Tendencies Measure (SDTM)

Item No.	**Item**	**Extraction**	**Total Item and Item Scale correlations**				
SDTM-M			**SDTM-M**	**DE**	**ED**	**MHSDD**	**PE**
M1	I experience a prominent delay or absence in ejaculation during sexual activity.	0.937	0.484**	1.000**			
M2	I have difficulty in having erection for sexual activity.	0.653	0.642**		0.712**		
M3	I have trouble in maintaining erection during sexual activity.	0.759	0.703**		0.771**		
M4	I feel distressed due to my sexual performance.	0.769	0.512**		0.746**		
M5	I don't feel sexual desires.	0.876	0.448**			0.798**	
M6	I experience a decrease or absence in my sexual/erotic thoughts or fantasies.	0.711	0.647**			0.781**	
M7	After penetrating penis into my partner's vagina, I usually ejaculate within the first minute against my wish.	0.801	0.632**				1.000**
SDTM-F			**SDTM-F**	**FOD**	**FSI/AD**	**GPPPD**	
F1	I have difficulty in having orgasm during sexual activity.	0.554	0.521**	0.739**			
F2	I usually remain uninterested to welcome my partner's sexual advances.	0.706	0.677**	0.802**			
F3	I feel distressed due to my sexual performance.	0.584	0.450**	0.644**			
F4	I don't feel sexual desires.	0.703	0.397**		0.805**		
F5	I experience a decrease or absence in my sexual/erotic thoughts or fantasies.	0.651	0.681**		0.804**		
F6	I experience pain during vaginal penetration.	0.692	0.630**			0.828**	
F7	I am afraid of vaginal penetration.	0.770	0.584**			0.870**	

SDTM-M= Sexual Dysfunctions Tendencies Measure for Males; SDTM-F= Sexual Dysfunctions Tendencies Measure for Females; DE=Delayed Ejaculation; ED=Erectile Disorder; MHSDD=Male Hypoactive Sexual Desire Disorder; PE=Premature Ejaculation FOD=Female Orgasmic Disorder; FSI/AD=Female Sexual Interest/ Arousal Disorder; GPPPD=Genito-Pelvic Pain/ Penetration Disorder.

**. Correlation is significant at the 0.01 level (2-tailed);

Table 4. Difference of Sexual Dysfunctions in males and females

	Males		Females				95% CI	
	M	*SD*	*M*	*SD*	*t*	*p*	*LL*	*UL*
Sexual Dysfunctions	2.36	0.82	2.69	0.81	2.63	0.010	0.57	0.07

CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit

Table 5. Means and Standard Deviations of Sexual Dysfunctions in males and females

Dysfunctions	M	SD
Overall Sexual Dysfunctions in Males	2.36	0.82
Delayed Ejaculation	2.24	1.37
Erectile Disorder	2.06	0.94
Male Hypoactive Sexual Desire Disorder	2.55	1.22
Premature Ejaculation	3.03	1.65
Overall Sexual Dysfunctions in Females	2.74	0.83
Female Orgasmic Disorder	2.49	0.99
Female Sexual Interest/ Arousal Disorder	2.93	1.19
Genito-Pelvic Pain/ Penetration Disorder	2.94	1.41

4. Discussion

The current study was aimed at developing a scale to measure sexual dysfunctions based on the criteria set by the Diagnostic and Statistical Manual of Mental Disorders (version 5). A new scale comprising 7 items for men and 7 items for women was constructed and validated during the study. The findings revealed that women had significantly higher levels of sexual dysfunctions as compared to men. Sexual dysfunctions have been considered among the prominent mental health problems (Spector and Carey, 1990). The DSM-V [1] describes symptoms for prominent sexual dysfunctions in men and women. Sexual Dysfunctions Tendencies Measure (SDTM) has incorporated all the sexual dysfunctions mentioned in the DSM-V except Substance / Medication-Induced sexual dysfunctions, and Other Specified/Unspecified sexual dysfunctions. The SDTM, in the current study, was found valid and reliable to use. The DSM-V considers Delayed Ejaculation is a significant delay or absence in ejaculation that must be experienced on all or nearly all incidents of sexual activity and is against the individual's wish. The SDTM's item M1 i.e. "I experience a prominent delay or absence in ejaculation during sexual activity", if gets responses from "most of the times" or "always", clearly reflects Delayed Ejaculation from its face validity and is found valid & reliable in SDTM (Table 3; communality=0.937; item-total & item-scale correlation is significant at the 0.01 level). Erectile Disorder, according to the DSM-V, is a difficulty in maintaining and obtaining erection and decrease in rigidity of penis. The SDTM's items M2 i.e. "I have difficulty in having erection for sexual activity", M3 i.e. "I have trouble in maintaining erection during sexual activity", and M4 i.e. "I feel distressed due to my sexual performance" if get responses from "most of the times" or "always", clearly reflect Erectile Disorder from their face validity and are found valid & reliable in SDTM (Table 3; communalities=0.653, 0.759, & 0.769 respectively; item-total & item-scale correlation is significant at the 0.01 level). Male Hypoactive Sexual Desire Disorder in DSM-V is reduced or absent sexual/erotic thoughts or fantasies and less sexual appetite. The SDTM's items M5 i.e. "I don't feel sexual desires", and M6 i.e. "I experience a decrease or absence in my sexual/erotic thoughts or fantasies", if get responses from "most of the times" or "always", clearly reflect Male Hypoactive Sexual Desire Disorder from their face validity and are found valid & reliable in SDTM (Table 3; communalities=0.876 & 0.711 respectively; item-total & item-scale correlation is significant at the 0.01 level). Premature Ejaculation in DSM-V is a consistent or repeated ejaculatory pattern in which the person ejaculates within one minute after penetration and that is against his wish. The SDTM's item M7 i.e. "After penetrating penis into my partner's vagina, I usually ejaculate within the first minute against my wish", if gets responses from "most of the times" or "always", clearly reflects Premature Ejaculation from its face validity and is found valid & reliable in SDTM (Table 3; communality=0.801; item-total & item-scale correlation is significant at the 0.01 level). According to the DSM-V, Female Orgasmic Disorder is a significant delay or absence in ejaculation that must be experienced on all or nearly all incidents of sexual activity. The SDTM's items F1 i.e. "I have difficulty in having orgasm during sexual activity", F2 i.e. "I usually remain uninterested to welcome my partner's sexual advances", and F3 i.e. "I feel distressed due to my sexual performance", if get responses from "most of the times" or "always", clearly reflect Female Orgasmic Disorder from their face validity and are found valid & reliable in SDTM (Table 3; communalities=0.554, 0.706, & 0.584 respectively; item-total & item-scale correlation is significant at the 0.01 level). Female Sexual Interest/Arousal Disorder in DSM-V is a decreased or absent interest or arousal in sexual activity. The SDTM's items F4 i.e. "I don't feel sexual desires", and F5 i.e. "I

experience a decrease or absence in my sexual/erotic thoughts or fantasies", if get responses from "most of the times" or "always", clearly reflect Female Sexual Interest/ Arousal Disorder from their face validity and are found valid & reliable in SDTM (Table 3; communalities=0.703 & 0.651 respectively; item-total & item-scale correlation is significant at the 0.01 level). Genito-Pelvic Pain/Penetration Disorder in DSM-V is a continuous or recurring difficulty in vaginal penetration or significant vulvo-vaginal/pelvic pain during intercourse. The SDTM's items F6 i.e. "I experience pain during vaginal penetration", and F7 i.e. "I am afraid of vaginal penetration", if get responses from "most of the times" or "always", clearly reflect Genito-Pelvic Pain/Penetration Disorder from their face validity and are found valid & reliable in SDTM (Table 3; communalities=0.692 & 0.770 respectively; item-total & item-scale correlation is significant at the 0.01 level). Thus, all the items of SDTM reflect the symptoms for sexual dysfunctions mentioned in the DSM-V.

5. Limitations

The current paper reflected the development and validation of Sexual Dysfunctions Tendencies Measure. An exploratory factor analysis was carried out to achieve this objective. A confirmatory factor analysis could also have been done along with the discriminant and convergent validity of the scale. The authors intended to do these procedures in future studies.

6. Conclusions

Sexual Dysfunctions Tendencies Measure; containing 14 items, 7 for men and 7 for women; was developed to provide the general public with a short measure to depict possibilities for having sexual dysfunctions and to decide for a professional consultancy in this regard. The newly developed measure was badly needed as the earlier measures were too old and long. Furthermore, there was no measure available on the criteria of DSM-V. The findings revealed that the scale and its subscales were valid and reliable. The scale is provided herewith as an annexure.

Ethical Statement

All the procedures performed in this study were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Conflict of Interest

The authors declare no conflict of interest.

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Appendix

SEXUAL DYSFUNCTIONS TENDENCIES MEASURE (SDTM)

Instructions:

The following scale is aimed at identifying any possible sexual dysfunctions. It has two versions i.e. separate versions for males and females. You are requested to please respond to the following statements truly by keeping the **LAST SIX MONTHS** in mind. You are supposed to tick ✓ only one box for each statement. Please do not leave any statement without a response. Thanks.

SDTM-Males

1. I experience a prominent delay or absence in ejaculation during sexual activity.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

2. I have difficulty in having erection for sexual activity.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

3. I have trouble in maintaining erection during sexual activity.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

4. I feel distressed due to my sexual performance.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

5. I don't feel sexual desires.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

6. I experience a decrease or absence in my sexual/erotic thoughts or fantasies.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

7. After penetrating penis into my partner's vagina, I usually ejaculate within the first minute against my wish.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

SDTM -Females

1. I have difficulty in having orgasm during sexual activity.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

2. I usually remain uninterested to welcome my partner's sexual advances.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

3. I feel distressed due to my sexual performance.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

4. I don't feel sexual desires.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

5. I experience a decrease or absence in my sexual/erotic thoughts or fantasies.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

6. I experience pain during vaginal penetration.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

7. I am afraid of vaginal penetration.

   Never ❒ Rarely ❒ Not Sure ❒ Sometimes ❒ Most of the times ❒ Always ❒

Response Values:

Never = 1; Rarely = 2; Not Sure = 3; Sometimes = 4; Most of the times = 5; Always = 6

Scoring:

The scoring for this scale is done by calculating mean for the scale and its subscales. To obtain mean values, use the following method:

Sexual Dysfunctions Tendencies Measure for Males

Overall Sexual Dysfunctions = Sum (items 1 to 7) / 7

Delayed Ejaculation = Sum (item 1)

Erectile Disorder = Sum (items 2, 3, 4) / 3

Male Hypoactive Sexual Desire Disorder = Sum (items 5, 6) / 2

Premature Ejaculation = Sum (item 7)

Sexual Dysfunctions Tendencies Measure for Females

Overall Sexual Dysfunctions = Sum (items 1 to 7) / 7

Female Orgasmic Disorder = Sum (items 1, 2, 3) / 3

Female Sexual Interest/ Arousal Disorder = Sum (items 4, 5) / 2

Genito-Pelvic Pain/ Penetration Disorder = Sum (items 6, 7) / 2

Interpretation:

1.0 – 1.9 = Not at all present; 2.0 – 2.9 = Rarely Present; 3.0 – 3.9 = Doubtable to be Present;

4.0 – 4.9 = Somewhat Present; 5.0 -5.9 = Moderately Present; 6.0 = Severely Present

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