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Assessment of Psychological Well Being and Quality Of life among Fishermen Community in a select Edrural Community Area, Chengalpattu District, Tamil Nadu

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Abstract

Background: Fishermen community is a group of people geographically located in the coastal areas and have their own way of life and a distinctive culture, A variety of stressors that have an effect on physical and mental health are experienced by commercial fishermen. However, there is limited research on the level of mental ill-health among fishers and In certain monsoon season mostly, fishermen cannot go to the sea due to bad weather condition, Because of this, fisherman typically have low-quality jobs that are dependent on the weather. When we look at the association between various stressor categories and psychological distress, we see that fishers who perceive "traditional risks" and "modern uncertainties" as being more intensely are more likely to experience psychological distress.

Objectives\aim: To assess the psychological wellbeing among fishermen community, To assess the quality of life among fishermen community, To find out the association between the psychological wellbeing and quality of life among fishermen community with their selected demographic variables, To find out the correlation between psychological wellbeing and quality of life among fishermen community.

Materials and Methods: Quantitative descriptive research approach was used in this study.140 fishermen were selected by using randomized sampling technique in kokilamedu, Chengalpattu district. A valid study questionnaire was used to collect data on socio-demographic characteristics of fishermen, psychological wellbeing was assessed by using genral health questionnaire and quality of life was assesses by using WHO QOL BREF scale among fishermen community.

Results: The study shows that most of the fishermen were not affect with mental illness (98.6%) whereas remaining 1.4%were affect with mental illness, majority of the fishermen were had average quality of life (94.3%) whereas 5.7%of fisherman had good quality of life.**Conclusion:** Assessment on psychological wellbeing and quality of life among fishermen shows that most of the fishermen were not affect with mental illness and the most of the fishermen had average quality of life.

Key Words: Assessment, psychological wellbeing, quality of life, fishermen community.

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Introduction

Psychological wellbeing has two important facets The first of these is how much joy and other positive emotions people experience. Subjective wellbeing is a term that has been used to describe this component of psychological wellbeing. A population's or an individual's wellness in terms of both positive and negative facets of their existence at a certain time is referred to as their quality of life (Azid, A et al.,2015)[1]

The management of fishermen's issues falls within the purview of the Department of Fisheries Malaysia, a division of the Fisheries Development Authority of Malaysia (LKIM). The fishing industry contributes 1.47 % of the Gross Domestic Product (GDP). Although this is considered small, the fisheriessector is a major producer of protein for the population of this country. The government's roleis seen as one effort to help the fishermen and farmers as well as livestock farmers to be competitive with the other sectors, thus helping them to increase their household income. The People's Welfare Development Scheme (SPKR) and a few other programmers have been specially prepared to diversify their sources of income. The majority of the fishing community's economic situation is still poor despite the fact that the fisheries sector has seen significant changes in terms of technology and landings. In addition to the government's efforts to increase their income, the impact of development in surrounding residential areas also affects the level of the fishing community's welfare. The improvement of the fishermen's quality of life is also aided by development in the tourism and industrial sectors. Their standard of living is impacted by the facilities the government has put in place (kuala mohd zain et al., 2018)[3].

A variety of pressures that fishermen encounter have an effect on their physical and emotional wellbeing. There is, however, little information on the extent of mental illness among fishermen and the kind of stresses that fuel their psychological suffering. The focuses on the experiences of commercialwild-catch fishers and analyses the results of an Australian national survey conducted Patricia (Crisan Szabo, 2020)[5]

In certain monsoon season mostly, fishermen cannot go to the sea due to bad weather condition. Fishermen are weather-dependent; in good weather, they will go out in search of food; in bad weather, they will be unable to work for several months until the conclusion of the monsoon season. Because of this, fisherman typically have low-quality jobs that are dependent on the weather. (HayrolAzriletal.,2013)[6]

Materials and methods

A quantitative descriptive study approach was used for the study. The aim of the study was to assess the psychological well-being and quality of life among fishermen. Quantitative descriptive survey research design was adopted for this study, which is a non-experimental research design used to obtain data with regard to its prevalence, distribution and interrelations. The study was conducted in kokilamedu situated in pooncheri near Mahabalipuram, Chengalpattu district, Tamil Nadu. The target population for this study was people in the fishermen community, who were in the age group of 18years to above 60 years.Both male and female were taken for the study, who were available during the timeof data collection period were included in the study. Whereas, people who were sick and known to haveany mental illness were excluded from the study. 140 fishermen, who met the inclusion criteria were considered to be the part of the study population. Random sampling technique in which the participants were selected as per choice of the researcher was utilized in the study. The study tool contains three parts. Part 1 consist of the personal information of the participants such as age, gender, education, marital status, income, types of life, religion, occupation, hours of working, boat ownership. Part 2 was a General Health Questionnaire to assess the psychological wellbeing among fishermen community. Which is standardized tool 4point ratingscale consisting of 28 items and stratified into domains for each consist of 7 questions. It includes options such as not all time, no more than usual, rather more than usual, and much more than usual which is scored as 0, 1, 2, &3 respectively in which scores will be given basedupon the response of the participants. Based on the scores obtained by the participants, theirpsychological level will be assessed. Part 3 is a WHO QOL BREF SCALE which is a standardizedtool, it is a 5-point rating scale consist of 26items and stratified into physical (7), psychological(6), social relation (3) and environment

(8) domains. It includes options such as not all, not much, moderately, great deal and completely which is scored as 1,2,3,4 and 5 respectively. The total score ranged from26-130.item number 13 had reverse scoring. The quality of life of the participant was assessed through their responses and classified them into poor QOL, average QOL, good QOL based on the total scores obtain by each of them.

Data collection:

Prior formal permission was obtained from the head of the department of Mental Health Nursing, Institutional Human Ethics Committee Clearance was obtained from Chettinad Academic of Research and Education for conducting the study. Consent was obtained from the ethical committee and from the samples. Samples were selected using random sampling and demographic variables was obtained followed by level of mental health and quality of life using general health questionnaire and WHO quality of life respectively. In the next phase the data collection procedure was done in a rural fishermen community area, Chengalpattu district. The data was collected for a period of 1 week from 140 samples. Prior permission and consent was obtained from participants before conducting the study. In this study the researcher conducted interview for samples who met the inclusion criteria, for 20 minutes to collect data in personal information and general health questionnaire and WHO quality of life to assess the level of mental health and quality of life among the fishermen community. The collected data was analyzed and interpreted. The data was analyzed using statistical instruments.

Analysis:

It deals with the analysis and interpretation of data collected to assess the level of mental health and quality of life in a selected rural community area. Statistical analysis was done by using descriptive and inferential statistics. Data were entered into Microsoft Excel and all entries were cross-checked against the questionnaire. The categorical data was expressed as percentage, whereas the continuous data were expressed as mean ± standard deviation. Chi-square test was used to test the association of different variables with socio demographic data of the participants. A probability value of < 0.05 was considered as statistically significant. The data was presented under the following headings, Fig 1: percentage distribution of income of fishermen community , Fig 2: percentage distribution of occupation of fishermen community Table 1: Frequency and percentage of demographic variables of fishermen community, Table 2: Frequency and percentage distribution of psychological wellbeing of fishermen community, Table 3: Frequency and percentage distribution of quality of life of fishermen community, Table 4: Association of psychological wellbeing with their selected demographic variables among fishermen community, Table 5 Association of quality of life with their selected demographic variables among fishermen community, Table 6: correlation between the psychological wellbeing and quality of life among fishermen community.

Findings

Frequency and percentage of demographic variables of fishermen community In a total of 140 respondents, the significant percentage of fishermen community aged were 20-30yrs(50.7%) followed by 25%of fishermen were aged between 41-60years, the least percentage of fishermen were 24.3%, Most of the fishermen community gender were female(70%) and 30% of fishermen were male, Majority of the fishermen were illiterate(42.1%) followed by 30.7% were primary school, 22.1% of fishermen had educationalqualification of higher secondary and the least percentage(5%) of fishermen had degree, most of the fishermen were married(88.5%), remaining percentage of 11.4% were unmarried, the significant percentage of monthly income for fishermen were above5000(50.7%),followed by1000- 5000 were 30.7% and 18.6%of fishermen were getting only 1000. most of the fishermen were living in nuclear family (78.6%) whereas 21.4% were living in joint family, majority of fishermen had no child (52.9%) whereas 35.7% of fishermen had 1 child, least percentage of fishermen had 2 child (11.4%), most of the fishermen were selling fishes of (81.4%) remaining 18.6% of fishermen were active fishing, majority of the fishermen wereworking an hour of <3hrs and 3-8hrs of same percentage of 29.3% whereas 41.4% were working for 9-12hours. the significant percentage of fishermen had their own boat 67.9% whereas remaining 32.1% of fisherman had rent boat. Frequency and percentage distribution of

psychological wellbeing of fishermen community: Most of the fishermen were not affected with mental illness (98.6%) whereas remaining 1.4% were affected with mental illness. Frequency and percentage distribution of quality of life of fishermen community: Majority of the fishermen had average quality of life (94.3%) whereas 5.7% of fishermanhad good quality of life. Association of psychological wellbeing with their selected demographic variables among fishermen community: There is no significant association of demographic variables with the psychological wellbeing of fishermen community: Association of quality of life with their selected demographic variables among fishermen community: There is a significant association of demographic variables such as age(p=0.023), maritalstatus(p=0.017), no of children(p=0.042) with the level of quality of life. correlation between the psychological wellbeing and quality of life among fishermen community: The correlation between the level of psychological wellbeing and quality of life had score of r=0.030 it indicates positive correlation between psychological wellbeing and quality of life hence hypothesis is strongly accepted.

Table 1: Frequency and percentage of demographic variables of fishermencommunity

S. No	Demographic variables	frequency	percentage
1	**Age**		
	20-30 yrs	71	50.7
	31-40 yrs	35	25
	41-60 yrs	34	24.3
	Above 50 yrs.	0	0
2	**Gender**		
	male	42	30
	female	98	70
	transgender	0	0
3	**Education**		
	Illiterate	59	42.1
	Primary	43	30.7
	Higher secondary	31	22.1
	Any degree	7	5.0
4	**Marital status**		
	Married	124	88.5
	Unmarried	16	11.5
	Divorced	0	0
5	**Types of family**		
	nuclear	110	78.6
	joint	30	21.4
6	**no of children**		
	0	74	52.9
	1	50	35.7
	2	16	11.4
	More than 2	0	0

Continue.....

7	**Hours of working**		
	<3 hours	41	29.3
	3-8 hours	41	29.3
	9-12 hours	58	41.4
	>12 hours	0	
8	**Boat ownership**		
	Own	95	67.9
	Rent	45	32.1

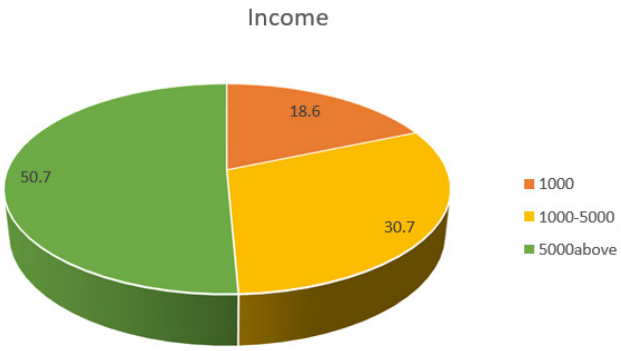

Fig 1: percentage distribution of income of fishermen community

Fig 2: percentage distribution of occupation of fishermen community

Table 2: Frequency and percentage distribution of psychological wellbeing offishermen community.

Psychological well Being	Frequency	Percentage
Affect with mental health	2	1.4
Not affect with mentalhealth	138	98.6

Table 3: Frequency and percentage distribution of quality of life of fishermencommunity

Quality of life	Frequency	Percentage
Poor QOL	0	0
Average QOL	132	94.3
Good QOL	8	5.7

Table 4: Association of psychological well being with their selected demographic variables

S. No	Demographic variables	Category	No of samples (n)	Psychological well being		X2	P value
				Affected(M) health	Not affectd(M) health		
1	Age in years	20-30 yrs	71	1	70	1.000	df=2
		31-40 yrs	35	1	34		
		41-60 yrs	34	0	34		0.606
		Above 50 yrs	0	0	0		(NS)
2	Gender	Male	42	0	42	0.870	df=1
		Female	98	2	96		0.351
		Transgender	0	0	0		(NS)

Continue.....

3	Education	Illiterate	59	0	59	1.913	df=3 0.591 (NS)
		Primary	43	1	42		
		Higher Secondary	31	1	30		
		Any degree	7	0	7		
4	Marital status	Married	124	2	122	0.262	df=10 0.609 (NS)
		Unmarried	16	0	16		
		Divorced	0	0	0		
5	Income	1000	26	0	26	0.623	df=2 0.732 (NS)
		1000-5000	43	1	42		
		5000 above	71	1	70		
6	Types offamily	Nuclear	110	1	109	0.984	df=1 0.321 (NS)
		Joint	30	1	29		
7	No of children	0	74	0	74	3.830	df=2 0.147 (NS)
		1	50	1	49		
		2	16	1	15		
		More than 2	0	0	0		
8	Occupation	Active Fishing	26	0	26	0.483	df=1 0.496 (NS)
		Selling Fishing	114	2	112		
		Other fish related work	0	0	0		
9	Hours of working	<3 hours	41	1	40	0.927	df=2 0.629 (NS)
		3-8 hours	41	0	41		
		9-12 hours	58	1	58		
		>12 hours	0	0	0		
10	Boat ownership	Own	95	1	94	0.297	df=1 0.583
		Rent	45	1	44		

S significant **NS** Non-significant

Table 5: Association of level of quality of life with their selected demographic variables

s.no	Demographic variables	Category	No of samples (n)	Quality of life			X2	P Value
				Low QOL	Average QOL	GOOD QOL		
1.	Age in years	20-30 yrs	71	0	70	1	7.545	df=2 0.023(S)
		31-40 yrs	35	0	33	2		
		41-60 yrs	34	0	29	5		
		Above 50 yrs	0	0	0	0		
2	Gender	Male	42	0	38	4	1.616	df=1 0.204(NS)
		Female	98	0	94	4		
		Transgender	0	0	0	0		

Continue.....

3	Education	Illiterate	59	0	57	2	4.163	df=3 0.244 (NS)
		Primary	43	0	38	5		
		Higher	31	0	30	1		
		Secondary						
		Any degree	7	0	7	0		
4	Marital status	Married	124	0	119	5	5.698	df=1 0.017(S)
		Unmarried	16	0	13	3		
		Divorced	0	0	0	0		
5	Income	1000	26	0	23	3	4.475	df=2 0.107 (NS)
		1000-5000	43	0	43	0		
		5000above	71	0	66	5		
6	Types offamily	Nuclear	110	0	106	4	4.114	df=1 0.043(S)
		Joint	30	0	26	4		
7	No of children	0	74	0	70	4	6.340	df=2 0.042(S)
		1	50	0	49	1		
		2	16	0	13	3		
		More than 2	0	0	0	0		
8	Occupation	Activefishing	26	0	25	1	0.2071	df=1 0.649 (NS)
		Selling	114	0	107	7		
		Fishing						
		Other fish related work	0	0	0	0		
9	Hours ofworking	<3hours	41	0	37	4	3.878	df=2 0.144 (NS)
		3-8hours	41	0	41	0		
		9-12hours	58	0	54	4		
		>12hours	0	0	0	0		
10	Boat ownership	Own	95	0	91	4	1.240	df=1 0.265(NS)
		Rent	45	0	41	4		

S significant **NS** Non significant

Table 6: correlation between the psychological wellbeing and quality of life among fishermen community.

S.no	Variables	Correlation
1	Psychological wellbeing	0.030
2	Quality of life	

Conclusion

The purpose of this study was used to assess the psychological wellbeing and quality of life among fishermen findings shows that fishermen community not affect with mental illness and had average quality of life which is assessed through tool of GENRAL HEALTH QUESTIONNAIRE and WHO QOL scale, By prioritizing the psychological well-being of the fishermen community, we can contribute to their overall quality of life and enhance their resilience in the face of the numerous challenges they encounter. Further research is needed to explore additional factors that may impact psychological well-being among fishermen and to evaluate the effectiveness of interventions aimed at improving their mental health and quality of life.

Conflict of Interest: Nil

Source of Funding: Self

Ethical Clearance:

The UG Committee clearance and Institutional Ethical Committee clearance was obtained from CARE. Permission was from the HOD of Mental Health Nursing Department, Chettinad College of Nursing as well as from the HOD of Community Health CHRI. The purpose of the study was explained to the participants and their written consent was obtained before the beginning of the study. The participants were informed that they were free to withdraw from the study during any stage of the study period and the confidentiality of the data collected for the research purpose will be maintained and will be utilized only for the study purpose.

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Original Research

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Development of a Nurse-Led Drug Avoidance and Therapeutic Adherence Training Module for Inpatients Diagnosed with Substance Use Disorders

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Abstract

Psychiatric nurses can effectively maintain sobriety among patients diagnosed with substance use disorders and improve their quality of life through education and training. However, structured formats for training are grossly lacking in the Indian literature. This paper describes the development of a Drug Avoidance and Therapeutic Adherence (DATA) training module that can be effectively implemented by nurses. The DATA Training module was designed and content validated in five stages; 1) an extensive literature search; 2) Focused Group Discussions (FGDs) with psychiatric nurses practicing in the de-addiction units of the selected mental health establishments; 3) development of the preliminary draft; 4) Content validation; and 5) Final draft of the DATA Training module. The FGDs concluded the content and layout of the module and the content validity measured based on the experts' suggestions were good (mean CVI=0.85). The DATA training module provides structured guidelines for nurses in delivering effective strategies to maintain sobriety and improve quality of life.

Keywords: Substance use disorders, Psychiatric Nurses, Training module

Introduction

SUD is a major global issue with vast implications for public health. According to the World Drug Report-2022, around 284 million people aged 15-64 used drugs worldwide in 2020, accounting for a 26 percent increase over the previous decade. Young people are using more drugs, with use levels today in many countries higher than with the previous generation. (1) use more drugs, with use levels today in many countries higher than Moreover, the COVID-19 pandemic situation has pushed more people toward deviant behavior associated with illicit or illicit substance use.(2)

Risks of relapse and poor therapeutic adherence are the major hurdles to maintaining a healthy life. Patients with SUDs often benefitted from self-modulated independent interventions based on avoidance strategies to cope with their cravings and to promote treatment adherence. Psychoeducational approaches are effective in facilitating recovery in SUDs along with the pharmacological regime.(3)

Available research shows that interventions by a respected care provider, such as a nurse, nurse educator, or physician, in the context of usual medical care can educate and motivate individuals who are misusing substances to understand and acknowledge their risky behavior and to reduce their substance use.(4,5)

Many studies have identified nurses to be effective counselors in the management of harmful

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substance use.[6-11] Indirect evidence on effectiveness in brief alcohol intervention delivered by nurses was reported in a WHO trial involving 10 countries. This trial reported an average 25% reduction in alcohol consumption by nurse-led intervention compared with assessment-only controls .[12]

Most substance use-related intervention studies have focused on nurses supporting physician-led interventions. [13,14] When nurses and physicians delivered interventions compared, no statistically significant difference in effectiveness has been reported in Western literature. Structured, evidence-based practice guidelines made available to practicing psychiatric nurses will be beneficial in terms of favorable patient healthcare outcomes. The present study aimed at the development of a nurse-led Drug Avoidance and Therapeutic Adherence (DATA) training module.

Methodology

The DATA Training module was designed and content validated in four stages; 1) an extensive literature search; 2) focused group discussion with psychiatric nurses practicing in the de-addiction units of the selected mental health establishments; 3) development of the preliminary draft; 4) Content validation of DATA Training module. The validated DATA training module can serve as a referral material to practicing psychiatric nurses in delivering structured training programs to improve quality of life and maintain sobriety.

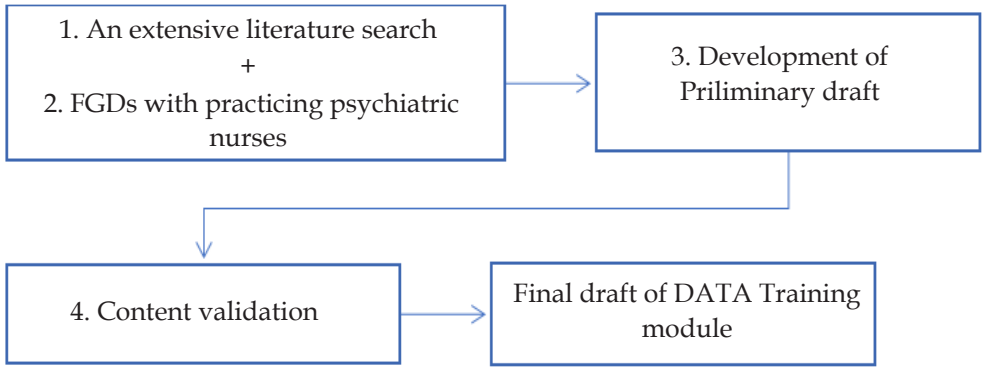

Figure 1. Stages of Development of DATA training module

Ethics approval was obtained from the institutional ethics committee of the Mental Health Center, Thiruvananthapuram. Permission from the Department of Health Services, Government of Kerala was obtained before data collection. Only subjects with written, informed consent were included in the study.

Stage 1: An Extensive Literature Search

The literature search was done using MeSH terms such as sobriety management, relapse prevention, and role of psychiatric nurses from several databases such as PubMed, PsycINFO, Science Direct, and CINAHL for the existing and the latest articles related to drug avoidance and therapeutic adherence strategies. The researcher identified 18 studies on the various effective practicing strategies for patients with SUDs on drug avoidance and therapeutic adherence.

Stage 2: Focused Group Discussion with Psychiatric Nurses

Second, to have an in-depth understanding of the practicing psychiatric nurses' opinion on the effectiveness of teaching drug avoidance and therapeutic adherence strategies and their views and opinions on the mode of delivering instruction to practice these strategies, Focus Group Discussions (FGDs) were carried out with the practicing psychiatric nurses at de-addiction units attached to selected Mental Health establishments (*N*=3) in Thiruvananthapuram, Kerala. A detailed description of the process of FGDs is published elsewhere.[15]

Stage 3: Development of the preliminary draft

Based on the review of the literature and the inputs from the FGDs with the practicing psychiatric nurses in the de-addiction units, a preliminary draft

of the DATA Training module was developed. Later, proofreading on the content of the module was done by the researcher. Grammar checking was done using the Grammarly application. An English language expert also did the proofreading.

Stage 4: Content validation of the DATA Training module

The module was sent for content validation among Psychiatry and Mental Health subject experts. The expert panel was composed of two psychiatrists, three psychiatric social workers, three psychiatric nurses, and two psychologists.

The subject experts evaluated the content of the training module to determine whether the contents described were appropriate. They gave their agreement on the appropriateness and relevance of the contents on a 4-point scale (1 for strongly disagree; 2 for disagree; 3 for agree and 4 for strongly agree). Content validity was evaluated in five aspects such as scientific accuracy, organization, language, presentation, and practice assignments. Specific suggestions on the individualized sessions were also asked along with this checklist. To obtain the Content validity index, CVI, the number of experts agreeing (that is, rating 3 or 4) on an aspect was divided by the total number of experts. Judgment on each item was made as follows; if the CVI was higher than 0.79, the item was deemed relevant; if the CVI was between 0.70 and 0.79, the item needed revisions; and if the CVI was less than 0.70, the item was eliminated. The suggestions from the experts were incorporated to form the final module.

Results

Socio-Demographic Characteristics of the Subjects for FGD

Psychiatric nurses (n=18) who gave consent were included in the FGDs. The mean age of the subjects recruited for the FGD was 28.4 years. Most (81.82%) of the subjects had a diploma in nursing qualification. All the participants had a minimum of 9 months of working experience in the de-addiction unit at the time of recruitment. A detailed description of the qualitative findings from FGDs is included in another publication [15] by the researchers.

The Preliminary draft of the DATA Training module

The preliminary draft of the training module was developed based on information obtained from the FGDs and the recommendations referring to content, language, organization, layout, illustration, learning, and motivation. The module has five units. The brief structure of the module is summarized in Table 1.

Table 1. Units, sessions, and duration of the DATA Training module

No.	Name of the sessions	Duration	Sessions
Unit 1 Introductory			
1.1	Key objectives and introduction of participants	60 minutes	Session 1
1.2	Pre-assessment	30 minutes	Session 2
Unit 2: Substance Use Disorders Literacy			
2.1	Substance use disorders- Basic concepts	30 minutes	Session 3
2.2	Etiology of substance use disorders	30 minutes	Session 4
2.3	Health consequences of substance use	30 minutes	Session 5
Unit 3: Drug Avoidance Training			
3.1	Craving management	60 minutes	Session 6
3.2	Managing high-risk situations	30 minutes	Session 7
3.3	Motivation for recovery	30 minutes	Session 8
Unit 4: Promoting Therapeutic Adherence			
4.1	Treatment for substance use disorders	30 minutes	Session 9
4.2	Anticipating and preventing relapse	60 minutes	Session 10
4.3	Repairing relationships and personal life	30 minutes	Session 11
Unit 5: Summary			
5.1	Summarizing	30 minutes	Session 12
5.2	Post assessments	30 minutes	Session 13

Content Validation by the Expert Panel

Table. 2. Content Validity Index for DATA Training Module by the Expert Panel Members (n=10)

Criteria for evaluation/Item description	Agreement (Rating 3/4)	Disagreement (Rating 1/2)	CVI*	Interpretation**
Scientific Accuracy & Content				
Comprehensiveness	8	2	0.80	Relevant
According to the interest of the participants	8	2	0.80	Relevant
According to the learning needs of the participants	9	1	0.90	Relevant
According to the mental status of the participants	10	0	1.00	Relevant
Matches the research objectives	8	2	0.80	Relevant
Organization of the Content				
Easy to difficult	8	2	0.80	Relevant
Concrete to abstract	8	2	0.80	Relevant
Simple to complex	9	1	0.90	Relevant
Language of the Content				
Easy	10	0	1.00	Relevant
Understandable	10	0	1.00	Relevant
Free from ambiguity	9	1	0.90	Relevant
Presentation of the Content				
Sequential	10	0	1.00	Relevant
Theoretical and demonstrative	8	2	0.80	Relevant
Use of a multisensory approach	9	1	0.90	Relevant
Scope for explanations	8	2	0.80	Relevant
Practice Assignment & Evaluation Forms				
Appropriateness to the sessions	9	1	0.90	Relevant
Easy to administer	9	1	0.90	Relevant

*CVI (Content Validity Index): The number of expert panel members who rated the unit as agreed (ratings 3 or 4) divided by the total number of expert panel members (n=10).

**CVI is higher than 0.79, the item is relevant.

The overall CVI of the module was 0.85, indicating that the module was deemed validated for its content. Table 2 represents the unit-wise CVI and its interpretation. At the end of the validation ratings, the subject experts were asked to provide a general opinion about the module. The recommendations were incorporated to finalize the DATA training module.

The content validation of the DATA training module required no major revisions, other than minor modifications, such as wording and grammar. This content-validated module can guide psychiatric nurses to conduct training programs for patients diagnosed with substance use disorders during their inpatient stay.

Discussion

The present study successfully developed a validated DATA Training module. The mean CVI was 0.85, thus confirming the content validity. Studies identified that validating educational material using CVI measurement improves its content quality. [16,17] Incorporating suggestions from subject experts makes the instructional materials more scientifically rigorous and effective.[18,19]

The various forms of educational interventions were used to decrease substance abuse among the various populations. The available literature suggests the involvement of nurses as a therapist in reducing substance use in diverse settings such as school health settings.[20] The nurse's role in delivering family-based therapies includes counseling, promotion of self-care activities, developing strengths and resources, providing supportive therapy, education, health teaching, and ultimately, building resiliency in youths and their families.[21] Nurses also address adolescents" substance use and related problems by enhancing family function through building skills related to communication and conflict resolution. [22] Interventions may include developing contracts to reinforce behaviors associated with abstinence from drugs, implementing skill-based interventions and training, developing communication skills, and facilitating access to education and training opportunities that can help the young person develop the skills necessary to obtain employment or attend school.[23]

The strength of the present study is that the DATA Training module will serve as a guide in facilitating drug avoidance and therapeutic adherence training among practicing psychiatric nurses. Maintenance of drug-free lifestyles warrants careful adaptation of drug avoidance skills and effective therapeutic adherence. [24] This can be better facilitated by nurses following structured psychoeducational interventions while patients are in the hospital. [25]

A likely limitation of this study is that the opinions and views have purely relied on the subjects' retrospective recall. However, the opinions of nurses who have appropriate working experience in caring for persons diagnosed with SUDs are of valid addition. Data from the present study justify that more in-depth qualitative studies are to be conducted to explore the roles of religion, and orientation to the self-help groups in increasing drug avoidance and therapeutic adherence among persons with SUDs.

Conclusion

The DATA Training module was developed specifically for use in the de-addiction settings, targeting the patients with SUDs facilitated by the nurses. The module was content-validated and found to be appropriate for patients with SUDs.

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Original Article

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Development of Nursing Students Stressor Questionnaire

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Abstract

Background: Stress has become a chronic and pervasive condition in the world today. Any stimulus which evokes a stress response is called a stressor. The objective of the study was to develop a questionnaire to measure stressors among first year B.Sc nursing students in Kerala.

Methods: Descriptive cross sectional design integrating both qualitative and quantitative methods were used for the study. Data was analyzed by qualitative content analysis, descriptive and inferential statistics.

Results: A 22 item screening instrument named as Nursing Students Stressor Questionnaire (NSSQ) was developed. Test retest reliability was found to be 0.923 with 95% CI 0.878 – 0.957. The internal consistency Cronbach's alpha of the tool was 0.866. Construct validity was established by exploratory factor analysis which yielded seven factors with Eigen Values more than one. The factors explained 60% of total variance.

Conclusion: NSSQ is a simple, easy to administer, self-reported screening instrument with acceptable reliability and validity.

Key words: Questionnaire, Stressor, Reliability, Construct validity, Factor Analysis.

Background

Stress has become a chronic and pervasive condition in the world today[1]. Hans Selye defined stress as "the state manifested by a specific syndrome which consists of all the non-specifically induced changes within a biologic system"[2]. Stress has been measured in three aspects: stressors, stress responses and individual characteristics[3].

Due to various internal and external expectations placed upon student's stress has become part of student's life[4]. Nursing students are likely to experience more stress than their friends and colleagues enrolled in other programs[5]. Systematic review on sources of stress among nursing students reported that academic, clinical, personal and social stressors are mainly present among students[6]. Studies from India and United Kingdom have reported increasing levels of stress among nursing students[7].

Stress has a negative effect on health, memory, problem-solving, ability to cope and all of which can lead to decreased academic performance[8]. The American Freshmen National Norms Study revealed that students joining college have increased levels of stress compared with other undergraduate students[9]. The stress levels of nursing students should be monitored in order to facilitate their ability to cope with stressful situations during their training[10]. This

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work originated from the concern about the non-availability of a valid and reliable instrument for assessment of stressors among first year baccalaureate nursing students in Kerala, India. The objective of the study was to develop a questionnaire to measure stressors among first year baccalaureate nursing students of Kerala.

Methodology

Research Approach

Mixed methods approach.

Study Design

Descriptive cross-sectional design.

Study Setting

Ten nursing colleges in Kerala.

Study Period

August 2016 – December 2016

Study Population

First year BSc Nursing students in Kerala.

Exclusion Criteria

- Those who did not give consent
- Those who were absent on the day of data collection

Source Population

First year BSc Nursing students of the academic year 2015-2016 from selected nursing colleges in Kerala.

Sample size and sampling

In-depth interviews and FGDs were the data collection methods adopted in qualitative phase. Sample size for these methods were decided based on redundancy of data. Purposive sampling method was adopted for focus group discussions (FGD) and in-depth interviews and samples were selected from Government, Government Self Financing and Private Nursing Colleges in Kerala. Six focus group discussion with students were done. Each FGD was conducted with 10 students. 27 in-depth inter views were done with stakeholders (i.e., with eleven students, ten faculty and six parents). Pilot study was done in a sample of forty from a private nursing college and this cluster was excluded from quantitative phase of the study.

The sample size needed for the quantitative phase of the study for a 36 item questionnaire was 360 based on the formula (10* total item of the tool). In order to get a cross sectional population of students one Government nursing college (75 students), two Government self-financing nursing colleges (100 students) and six Private nursing colleges (290 students) were selected for the quantitative phase of the study. Purposive sampling technique was adopted in the selection of colleges and from each college all eligible students were included in the study. The total students from these nine nursing colleges were 465. Among these 465 students 60 students who participated in FGD were excluded. So, from the remaining 405 students 372 students who met the criteria for the study were selected.

Data collection tools and techniques

The tools for data collection are:

- Focus group discussion guide for students
- In-depth interview guide for students, parents, and faculty
- The Stressor Questionnaire

Face to face interview and self-reporting was the technique used for data collection.

Steps in the development of stressor questionnaire

The questionnaire was designed to have the following properties.

- It should be a discriminative instrument to distinguish subjects who may have different levels of experience of stressors.
- It must capture the major stressors experienced by first year BSc nursing students
- The summary scores should be amenable to statistical analysis
- It should have acceptable levels of reliability and validity
- It should be relatively short, simple, and self-administered

Steps in the development of questionnaire are the following

Conceptualization

Literature reviews threw light on conceptualization of stressors which were mainly academic, clinical, personal and psycho-social in nature

Item generation

Items were generated from sources like research findings from literature, expert opinions, existing instruments and qualitative methods. These methods generated 137 items altogether.

Identification of items

66 items were identified from the pool of 137 items based on the prioritization by the researcher deleting all the repetitive item or those having the same meaning and the items were grouped under different domains.

Item selection

The list of 66 items were administered to 8 experts and I-CVI was calculated. The items were then reduced from 66 to 45. The content validity of the tool was also ensured through this process.

Item wording and item sequencing

The items were worded considering the reading level of respondent avoiding ambiguity, jargons etc. and were sequenced from general to specific

Response formatting and selection of type of scale

A 5 point likertscale with options ranging from very frequently to never was selected. The response very frequently was given a score of four and never a score of Zero. It was a self-rated questionnaire and higher the score higher the stressors experienced. All items were given equal weightage

Pretesting

Pretesting was done among 10 experts, 15 peers and 20 students and items were reduced from 45 to 36. These procedures established the face validity and content validity of the tool

Pilot study and cognitive interviewing

The instrument was administered under optimal conditions to a sample of forty students as a dress rehearsal of the main study. Cognitive interviewing was done with 15 students. Test-retest reliability was also done along with pilot study.

Final administration of tool

The refined 36 item tool was administered in a cross-sectional population of students based on the formula (10* total item of tool) and analyzed its psychometric properties

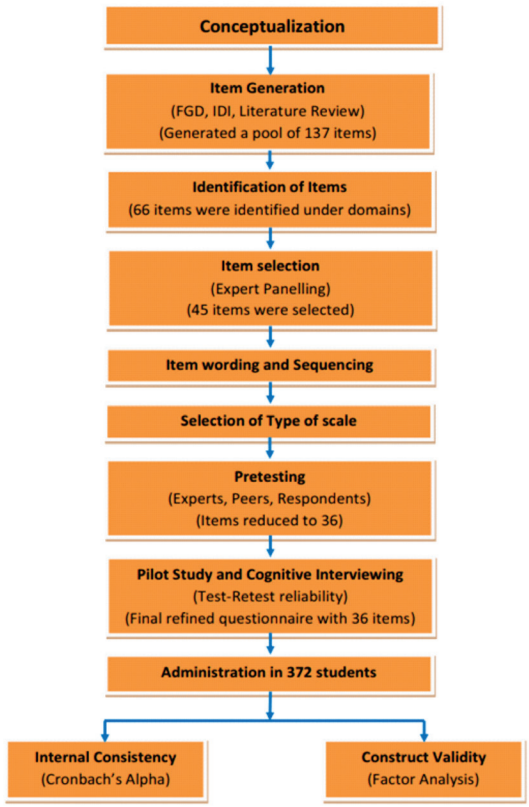

Figure 1: Steps in the development of stressor questionnaire

Item analysis

Item analysis involves various analysis done on each item to assess descriptive statistics, correlation matrices, internal consistency Cronbach's alpha and factor analysis for item reduction.

Descriptive statistics of the tool

Frequency, mean, standard deviation and graphical presentation of each item were done. Since none of the items showed 'floor and ceiling effect' no items were deleted during this phase.

Correlation matrix

Inter item correlation and Item total correlation was calculated and items were reduced from 36 to 27.

Reliability Assessments

Test retest reliability and internal consistency reliability were checked in the study. Test retest reliability was done in a sample of forty students by administering the questionnaire twice over a period of two weeks. The Intra – Class Correlation Coefficient calculated was 0.923 with 95% CI 0.878 – 0.957. Internal consistency reliability was estimated after a single administration of the questionnaire using Cronbach's Alpha. It was done to know whether all items in the tool are closely related to the construct under study. Cronbach's Alpha of 27 item tool was 0.885 and the final 22 item tool was 0.886.

Validity Assessments

The validity of the tool was measured in terms of face validity, content validity and construct validity. Face validity and Content validity was established during different stages of tool development. Construct validity was established by exploratory factor analysis. This produced seven factors with eigen values greater than one. Factor analysis of 27 item tool finally yielded one with 22 items.

Steps of Factor Analysis

Appropriateness of factor analysis

Significant value of Bartlett's test and KMO value of 0.866 indicated that the data was factorizable.

Factor extraction

Factor extraction was done using Principal Component Analysis (PCA). PCA yields communalities, Eigen Values, Percentage Variance and Factor loadings. If the communality of a particular variable is low then the variable will struggle to load significantly in any factor. All items in the newly developed tool had a communality of above 0.4. PCA yielded 7 factors with Eigen value >1. Scree test also yielded seven factors. The cumulative percentage variance explained by retained items were 60%. Factor loading indicate the degree of correlation between the variable and the factor. Only items with factor loading more than 0.35 were selected in the study.

Factor Rotation

After factor extraction varimax rotation was done. In case of those items with a factor loading>0.35 on more than one factor at the same time, the items to which it maximally loaded was selected. In case of cross loading and loading on a wrong factor the item was deleted. There should be a loading of minimum two items to consider as a factor. Finally, a 22 item seven factor structure tool with a variance of 60% was derived.

Labelling of factors

Factor 1 and 6 loaded psychosocial stressors, 2 and 3 clinical stressors, 4 personal stressors, 5 and 7 academic stressors.

Factors	Eigen Value	Percentage Variance	Cumulative Percentage Variance
1	5.939	12.693	12.693
2	1.577	10.406	23.099
3	1.315	8.250	31.349
4	1.191	7.697	39.047
5	1.112	7.442	46.489
6	1.027	7.293	53.782
7	1.010	6.087	59.869

Table 1: Eigen value and percentage of variance

Scoring pattern of new questionnaire

The newly developed Stressor Questionnaire was named as Nursing Students Stressor Questionnaire

(NSSQ). The average time for completion of NSSQ is 5 minutes. Since all the stressors were related to first year BSc nursing curriculum the tool is presented without any subscales. The score ranges between 0 and 88. Higher the score higher is the stressor experience.

Discussion

The item generation of the tool was based on literature reviews and qualitative methods. Cultural appropriateness and content relevance were ensured by the qualitative methods. The multiple sources of data collection offered an opportunity for data triangulation. Item generation including stake holders, item selection by expert paneling and series of pretesting established face validity and content validity of the tool.

The internal consistency of the questionnaire as estimated by Cronbach's Alpha is 0.866. Various authors have made different recommendations regarding the minimum level of reliability. Streiner & Norman reports ideally it should exceed 0.8[11]. Xie & De Vellis recommends an alpha coefficient of 0.70 – 0.80 as respectable and 0.80 – 0.90 as very good[12]. An alpha of 0.70 is rated as an acceptable standard by Nunnally also[13]. The test retest reliability estimated by Intra Class Correlation Coefficient was 0.923 with 95% CI 0.878 – 0.957. Indrayan reports any value not less than 0.75 is enough for good agreement[14].

The exploratory factor analysis yielded 7 factors by Principal Component Analysis. Among various extraction methods PCA is recommended as the best extraction technique[15]. The eigen value of the components ranged between 5.939 and 1.010 and percentage of variance between 12.693 and 6.087. Using the eigen value for establishing a cut off is more reliable when the number of variables is between 20 and 50. All the items had factor loading above 0.35 which is ideal minimum prescribed by psychometricians. In most cases items loaded on to their appropriate factors. A total variance of 60% of the stressor questionnaire explained by the factors is also a desired property of the instrument. Streiner and Norman suggests a cumulative variance of at least 60% for the retained factors[11]. Some others go for 50 – 60 % in subjects like humanities[16].

Convergent and discriminant validity of the Stressor Questionnaire was assessed in the second phase of the study. Criterion validity was not checked due to the absence of gold standard measure. Thus, the validity assessments by factor analysis and testing of convergence were good enough to establish construct validity of the instrument.

The present study revealed that stressors are related to academic, clinical, personal and psychosocial factors. The finding supports the views of Pulido-Martos et al [6]. Jarone & Benjamin reported high stress in nursing students are related to clinical and interpersonal factors[5]. Academic load and interpersonal interactions came out as important stressors of student nurses in a study conducted by Shukla et al[17]. Abasimi et al reported student nurses mainly experience personal stressors followed by academic stressors and social stressors[18]. Many studies revealed that stressors of nursing students are mainly related to clinical practice[9,19,20].

Qualitative data strongly pointed out the fact that some of the traditional nursing procedures are outdated to be followed in the clinical setting. So, brain storming should be done and some of the traditional nursing procedures should be improvised to meet the demands of the real clinical practice.

Conclusion

The newly developed Nursing Students Stressor Questionnaire is a simple, easy to administer, self-reported screening instrument with acceptable reliability and validity.

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Ethical Clearance: Obtained

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Original Article

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Assessment of Farming and Mental Health Problems of Farmers, Selected Rural Community, Chengalpattu, Tamil Nadu, India

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Abstract

Background: Mental health is an important issue for the agricultural community. As someone who struggles with their own mental health, it is a big problem that affects people in many ways. Farmers, and those working in the agricultural industry, are considered a vulnerable group when it comes to mental health. Long hours, working in isolation, unpredictable weather that affects the quality of the crop, animal disease and trade concerns are only some of the issues that can impact the mental stability of farmers and their families.

Objectives: To assess the farming and mental health problems of farmers and to find the association between farming and mental health problems of farmers with their selected demographic variable.

Method and materials: Cross sectional survey approach and descriptive design were adopted to collect the data from 200 farmers at the age of above 18 years. The structured interview was conducted by using General Health Questionnaires (GHQ-28) to assess the mental health status of farmers.

Results: About 21% of farmers were affected with mental health problems. There was statistically significant association between age, gender, occupational status, number of children, marital status and annual income and mental health problems of farmers. It concluded that Farming families experience higher rates of mental health problems It is clear, however, that farming is associated with a unique set of characteristics that is potentially hazardous to mental health and requires further research.

Keywords: Mental health problems, Farming, Farmers

Introduction

India's official farmer population, is anywhere between 100 million and 150 million and also India is the no.1 in agriculture 2021 in the world. Agriculture in India is the essence of livelihood for around 58%of the population. According to the agriculture census 2015-16, Uttar Pradesh has 2.382 crore Agriculture and holdings. The highest in the country, followed by Bihar– 1.641 crore, Maharashtra

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1.529 crore, Madhya Pradesh 1.0 crore, Karnataka–0.8 crore, Andhra Pradesh– 0.852 core, Tamilnadu 0.794 core of the remaining in other States. According to agriculture department policy note demand no.5, Tamilnadu is the 11th largest state in India by area and the 6th most populous state. Stressful life event was strongest contributor for developing mental problems experienced by farmers. The analysis revealed that poor socio economic factors, size of land, labor, shortage, climate condition, institutional loan and non-institutional loan as a significant predictor of mental distress among farmers.(J Agromed 2016) (Lalitha Malusare, 2021) to assessment of mental health status among farmers in Maharashtra, India. The result revealed that more than half 58% of farmers have reported distress of mental health in the last two weeks. The most reported symptoms of mental health relate to anxiety and insomnia, with 55%of farmers suffering from these symptoms. The second highest ranking prevalence of symptoms is somatic problems (34.7%).Twenty-four percent of the farmers who reported symptoms of severe depression and only 7.3% of the farmers reported social dysfunction symptom of mental health. Farmers and agriculture workers are uniquely among the main occupational group that lives in the works almost exclusively in rural areas. Fifty-two papers were identifying with majority focusing on stress and coping styles farming. It is clear, however that farming is associated with a unique set of characteristics that is potentially hazardous to mental health and requires further research.

In 2016-2017 drought in Tamilnadu created the worst agriculture crisis in the state, where more than 40% of people earn a living from agriculture. The major reason for distress of farmers in India are a) unviable agriculture, b) ineffective minimum support prices (MSP) system, c)adverse terms of trade, d) rural indebtedness, and e) inefficient value in agriculture.

Recently, concern has increased globally over farmers' mental health issues. We present a systematic review of the outcomes, locations, study designs, and methods of current studies on farmers' mental health. In particular, this review aims to fill an important gap in understanding of the potential key risk factors affecting farmers' mental health around the world. In this research researcher have identified a number of occupational health risk through studies of farming communities, and some have specified farming as an especially stressful occupation. Farming is associated with a range of physical and mental health risks because of their hard work under challenging conditions. It has been shown that chronic stressors have a major influence on well-being and health. Particularly, stress is associated with an increased prevalence of mental disorders such as depression and anxiety. If farmers experience problems with their mental health at the same rates as the general population this would mean that approximately 25% of farmers worldwide are struggling with their mental health every year. As of 2015, a global level, over 322.48 million people worldwide suffer from some form of depressive disorder and as of 2017, more than 14 percent of the total population in India suffer from variations of mental disorder.

Objectives

To assess the farming and mental health problems of farmers.

To find the association between mental health problems of farmers with their selected demographic variables

Materials and Methods

The cross sectional survey approach and descriptive design were adopted to conduct the study in selected rural community. The 200 farmers above 18 years were selected by convenient sampling technique and excluded the farmers with known case of mental illness. The interview schedule consists of demographic variables, farming questionnaire and General Health Questionnaire (GHQ-28) to assess the mental health problems of farmers Demographic variables consists of 13 items such as age, gender, occupational status, types of family, educational status, number of children, marital status, yearly income, agriculture loan availed, land status, health insurance status, experience injury during past 12 months and took a vacation away from farm. Second tool was farming questionnaires it includes 15 questions and has two options, for yes(score=1),and no (score=0). General Health Questionnaire (GHQ) consists of 28 questions to assess the mental health problem among farmers. Each question has four options, not at all (score=0), no more than usual (score=1), rather more than usual (score=2), much more than usual (score=3).

Result and Finding

Frequency and percentage distribution of demographic variables of farmers

Table 1: Distribution of demographic variables of mental health status among farmers:

S. NO	Demographic Variable	Categories	Frequency	Percentage
1	AGE	19 -20	3	1.5
		21-30	43	21.5
		31-40	48	24.0
		41-50	46	23.0
		Above 51	60	30.0
2	GENDER	Male	129	65.0
		Female	71	35.0
3	OCCUPATIONAL STATUS	home maker	78	39.0
		Business	52	26.0
		full time farmers	70	35.0
4	TYPE OF FAMILY	Nuclear	157	78.5
		Joint	43	21.5
5	EDUCATIONAL STATUS	No formal education	74	37.0
		Primary education	77	38.5
		Secondary education	29	14.5
		degree and above	20	10.0
6	NO. OF CHILDREN	One	30	15.0
		Two	103	51.5
		Three and above	63	31.5
		Nil	3	1.5
7	MARITAL STATUS	Married	190	95.0
		unmarried	9	4.5
		Single	1	0.5
8	ANNUAL INCOME	60000	25	12.5
		20000	77	38.5
		above 25000	98	49.0
9	AGRICULTURE LOAN	< 1 lakh	123	61.5
		1-5 lakh	11	5.5
		Above 5 lakh	14	7.0
		Nil	52	26.0
10	LAND STATUS	< 5 acres	139	69.5
		>5 acres	61	30.5
11	HEALTH INSURANCE	Yes	151	75.5
		No	49	24.5
12	EXPERIENCE OF INJURY	Yes	9	4.5
		No	191	95.5
13	TOOK ANY VACATION	Yes	6	3.0
		No	194	97.0

Nearly 1.5% of samples were between the age group of 19-20 years, while 21.5% of samples were between the age group of 21-30 years, and 24% of samples were between the age group of 31-40 years, and 23% of samples were between the age group of 41-50 years, and 30% of samples were at the age group of above 51 years. Most of the samples were male (65%) and 35% of samples were female. Based on occupational status of farmers 39% of samples were homemakers and 26% of samples were in business and 35% of samples were involved in full time farming. Most of the samples were nuclear family (78.5%) and 21.5% of samples were joint family. Based on educational status 37% of samples had no formal education and 38.5% of samples had primary education and 14.5% of samples had secondary education and only 10% of samples had completed their graduation. Based on number of children 15% of samples have only one child, and 51.5% of samples have two children, and 31.5% of samples have three children, and only 1.5% of sample had no children. Based on the marital status of the farmers 95%of samples were married and 4.5%of samples were unmarried and only 5% of samples were single. Based on the annual income 12.5% of samples were 60,000 and 38.5% of samples were 20,000 and 49% of samples were above 25,000. Based on agricultural loans 61.5% of samples had lesser than 1 lakh and 5.5% of samples had 1-5 lakh and 7% of samples had above 5 lakh and 26% of samples had no agricultural loan. In land status of farmers 69.5% of sample have lesser than 5 acres and only 30.5% of sample have greater than 5 acres. Based on the health insurance of farmers 75.5% of samples have insurance and only 24.5% of samples had no any agricultural insurance. In the experience of injury during past 12 months that prevented working, only 4.5% of samples had experienced injury and most of the samples (95.5%) had no experience of injury during past 12 months. Based on the vacation that took farmers away from the farm during past 2 years, only 3% of sample took a vacation as way from the farm during past 2 years and most of the samples(97%) haven't took a vacation away from the farm during past 2 years.

Frequency and percentage distribution of farming among farmers.

Table 2: Frequency and percentage of farming of farmers

S.No	QUESTIONS	FREQUENCY		PERCENTAGE	
		Yes	No	Yes	No
1	Do you like farming?	115	85	57.5	42.5
2	Do you want to do some work other than farming?	79	121	39.5	60.5
3	Are you doing farming as your main occupation?	178	22	89.0	11.0
4	Are you the only member of your family Engaged in farming?	84	116	42.0	58.0
5	In the last six months, have you employed any labor in your farm land?	136	64	68.0	32.0
6	Have you purchased any land in the last 5 years?	34	166	17.0	83.0
7	Would you like your children to do farming after you?	127	73	63.5	36.5
8	Have you introduced new crops in the last 5 years?	34	166	17.0	83.0
9	Do you get seeds and fertilizers in time?	129	71	64.5	35.5
10	Do you have storage place for your yield?	30	170	15.0	85.0
11	Do you have market to sale your yield?	186	14	93.0	7.0
12	Did you allow seed drill in farming?	51	149	25.5	74.5
13	Do you determine the price you get for Your crop?	11	189	5.5	94.5
14	Do you use any specific type of irrigation For your farming?	17	183	8.5	91.5
15	Have you ever faced problems while practicing farming?	178	22	89.0	11.0

Nearly 115 samples (57.5%) were involved in full day farming and only 85 samples (42.5%) were not involved in full day farming. Only 79 samples (39.5%) were apart from farming and involved in some other work for farming and most of the samples,121 samples(60.5%) were not involved in some other work for farming. Almost 178 samples (89%) were affected due to the weather and seasonal changes and only 22 samples (11%) admit that they were not affected due to the weather and seasonal changes. Only 84 samples (42%) were only member of their family engaged in farming and the other 116 samples (58%) were involved in farming with their family members. Nearly 136samples(68%) were employed a labour in their farm in past 6 month and only 64 samples(32%) were not employed any labors in their farm. Only 34 samples (17%) were purchased land in last 5 years and most of the samples,166 samples(83%) were not purchased any land in last 5 years. Almost 127 samples(63.5%) want their children to do farming after them and remain 73 samples (36.5%) did not want their children to do farming after them. only 34 samples (17%) had introduced new crops in the last 5 years and 166 samples (83%) have not introduced new crops in last 5 years. Nearly 129 samples (64.5%) agreed that they got seeds and fertilizers in time and 71 samples (35.5%) were not getting seeds and fertilizers at right time. Only 30 samples (15%) had storage place and market for their yields and 170 samples (85%) did not have any storage place and market for their yields. Almost 186 samples (93%) were using pesticides, herbicides and spray in their farm and only 14 samples (7%) were not using pesticides, herbicides and spray in their farm. Only 11 samples (5.5%) allowed seed drill in their farm and 189 samples (94.5%) were not allowed the seed drill in their farm. Only 51 samples (25.5%) decides the price for themselves for the crops they get and 149 samples(74.5%) did not decide the price for the crops they get. Only 17 samples(8.5%) were used specific type of irrigation for their farm and 183 samples(91. 5%) were not used any specific type of irrigation in their farm. Nearly 178 samples (89%) had faced problems while practicing farming and only 22 samples (11%) were not faced any problems while practicing farming.

Frequency and percentage of mental health problems among farmers.

Table 3: Frequency and percentage of mental health problem among farmers

S.No	MENTAL HEALTH PROBLEM	SCORE	FREQUENCY	PERCENTAGE
1	Affected with mental Illness	≤23	42	21
2	Not affected with mental Illness	≥24	158	79

A most of the farmers were not affected with mental illness (n=158) is 79% and affected with mental illness (n=42) is 21%. The most commonly reported symptoms of mental health relate to anxiety and insomnia, with 55% of farmers suffering from this symptoms. The second highest ranking prevalence of symptoms is somatic problems (34.7%). Priyanka Bomblet (2020)

Association of mental health problems among farmers with their selected demographic variables

Table 4: Association of selected demographic variables with mental health status of farmers:

S. No	DEMOGRAPHIC VARIABLE	MENTAL ILLNESS		df	X2	P value
		Affected	Not affected			
1	AGE			4	11.376	0.023 S
	a)9-20	2	1			
	b)1-30	10	33			
	c)1-40	15	33			
	d)1-50	9	37			
	e) Above 51	6	54			
2	GENDER			1	6.616	0.01 S
	a) Male	20	109			
	b)Female	22	49			

Continue.....

3	OCCUPATIONALSTATUS			2	10.432	0.005 S
	a)homemaker	25	53			
	b)Business	5	47			
	c)Full time farmers	12	58			
4	TYPE OFFAMILY			1	0.189	0.663 NS
	a) Nuclear	34	123			
	b) Joint	8	35			
5	EDUCATIONAL STATUS			3	6.325	0.097 NS
	a) No formal education	14	59			
	b) Primary education	15	61			
	c) Secondary education	11	19			
	d) degree and above	2	19			
6	NUMBER OF CHILDREN			3	24.40	0 S
	a) One	4	26			
	b) Two	32	71			
	c) three and above	3	60			
	d) Nil	3	1			
7	MARITAL STATUS			2	10.722	0.005 S
	a)Married	36	154			
	b)Unmarried	5	4			
	c)Single	1	0			
8	ANNUAL INCOME			2	12.774	0.002 S
	a) 60000	2	23			
	b) 20000	26	51			
	c) above 25000	14	84			
9	AGRICULTURE LOAN AVAILED			3	0.297	0.961 NS
	a) Less than 1lakh	25	98			
	b) 1-5 lakh	3	8			
	c) above 5 lakh	3	11			
	d) Nil	11	41			
10	LAND STATUS			1	0.005	0.943 NS
	a) less than 5 acres	29	110			
	b) greater than 5 acres	13	48			
11	HEALTH INSURANCE			1	1.197	0.274 NS
	a) Yes	29	122			
	b) No	13	36			
12	EXPERIENCE OF INJURY			1	0.864	0.353 NS
	a) Yes	3	6			
	b) No	39	152			
13	TOOK ANY VACATION			1	0.070	0.791 NS
	a) Yes	1	5			
	b) No	41	153			

Showed that there was statistically significant association between age, gender, occupational status, number of children, marital status and annual income and mental health problems of farmers and other demographic variables are not statistically significant.

(**NS -**Non Significant, **S-** Significant)

Discussion

Farmers experience one of the highest rates of suicide of any industry and there is growing evidence that those involved in farming are at higher risk of developing mental health problems. Therefore the present study identify the mental health among farmers, for analysing mental health of farmers used general health questionnaire (GHQ-28). The study finding indicated that less than half (21%) of farmers only affected with mental health problem. There is a high prevalence of mental health problem including anxiety & insomnia and somatic symptoms in the farmer. Now the current suicidal rate of farmers were decreased in India. Stressful life event were strongest contributor for developing mental problems experiencing by farmers. The analysis revealed that farmers age,gender, occupational status,no.of children, marital status, annual income are as a significant predictor of mental health among farmers. Previous study found that More than half 58% of farmers were reported distress of mental health. The most commonly reported symptoms of mental health related to anxiety and insomnia with 55% of farmers suffering from this symptoms. The second highest ranking prevalence of symptoms is somatic problems (34.7%) Priyanka bomblet (2020). A study on farmers household suggested that farmers faced psychiatric problem and it is a significant risk factor for farmers suicide. Before the suicide victim had the behaviour changes that is observed by the victim family. The another study results that prevalence of mild to moderate anxiety was 27.7% and mild to moderate depression was (8.5%) Leonard.Jh (2013). The current study evident that the farmers borrow a agriculture loan and less land surface area sources are more likely to suffer from somatic problems, anxiety & insomnia, depression symptoms of mental health.

Conclusion

The present study determined the mental health of the farmers by using GHQ-28 questioner. There is a high prevalence of mental problems including anxiety and insomnia, somatic problems among the farmers.The collected data from the farmers is considered as the main part in the assessment of mental health problem among farmers. In this study, the researchers conclude that 21% of farmers have a mental illness. Approach involving increased awareness, access to mental health services, financial support, and community initiatives to create a supportive environment for farmer's well-being.

Ethical Clearence: Chettinad academy of research and education, Institutional Human Ethics Committee on 25/01/2022.

Source of funding: Self

Conflict of interest: Nil

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Original Article

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Parent–Adolescent Connectedness and Attitude to Communicate on Substance Abuseamong Parents of Adolescent Boys

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Abstract

Background/Aim: The youth drug epidemic is growing at an alarming rate in India among the adolescents. In India, a survey by non-governmental organizations revealed that 63.6% of patients who came for treatment were given drugs under the age of 15.It is important for the parents to talk with their adolescent boys regarding the ill effects of substance abuse. The study intends to explore whether the parents have an attitude to talk about substance abuse with their adolescent boys.

Materials and Methods: A quantitative descriptive research design was used. 100 parents of adolescents were selected using purposive sampling technique. A validated study questionnaire was used to collect data on socio-demographic characteristics, extent of communication, and parental attitudes to communicate on substance abuse. Inferential and descriptive statistics was used for data analysis.

Results: The projected outcome of the study was to create a statistical data on parent-adolescent communication, parental attitude to communicate on substance abuse and to create for awareness among parents of adolescent boys to take initiation to speak about ill effects of substance abuse and to lead a life free from substance use.

Conclusion: Majority of samples had moderate level of communication and adequate level of parental attitude regarding talk on substance abuse.

Key Words: Connectedness, Attitude to communicate, Parents of adolescent boys

Acronym: PACS – Parent Adolescent Communication Scale

PCC- Parent-Child Connectedness

Introduction

Adolescence is a crucial period where physical and psychological changes can occur in a greater extent. It is considered as the most vulnerable phase of life that brings in new and dramatic diversities in an individual's life[2]. Both being an adolescent as well

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as raising an adolescent is an enormous challenge as they are at the peak of exploring and basking their adulthood[3]. Many factors can create an emotional upheaval in adolescents that can make them sensitive to deleterious substances[7]. Parent-child bonding and communication have been highlighted as potential protective factors for substance use and abuse in adolescence[1]. The prevalence rate of substance abuse among youth shows a drastic expansion when comparing in conjunction with previous decades[3]. Many literatures have foregrounded the influence of parenting style on modifying the behavior of adolescents. The relationship and bond between parents and their children remarkedly have significance in delaying or reducing adolescent substance abuse. The attitude of parents towards the use of baleful drugs had to be evaluated as they are the one who must be proactive enough to enable their children to discourage and create cognizance among them regarding the consequences of substance abuse[1]. The prevalence rates of adolescent substance abuse still remains high in current scenario[2]. An open conversation and a positive attitude towards talk on consequences of substance abuse can create a hindrance in adolescent illicit substance usage[1]. This research tends to explore whether the parents have an attitude to talk about substance abuse with their adolescent boys. It also creates an insight among themselves regarding the importance of positive parental attitude on communicating with their adolescent boys on substance abuse and thereby lessening the harsh repercussions caused by it. This quantitative descriptive study on 'Parent-adolescent connectedness and attitude to communicate on substance abuse among parents of adolescent boys' aims to assess the level of parent-adolescent communication, problems in communication and parental attitude regarding talk on substance abuse. It also finds out the association between the level of communication and level of parental attitude to communicate on substance abuse with selected demographic variables. Many previous studies have considered communication and connectedness as a protective factor against substance abuse and focused on a particular substance like alcohol, cigarette or tobacco. In this study, the elements of communication and substance abuse specific communication attitude was examined using Modified PACS and ingenious self-structured attitude scale. Many researches and studies have highlighted on communication as a key among parent-child relationship. But their attitude to stay connected and communicate on peculiar areas of topic with their child has not yet been much explored. The importance of staying connected with their child along with a positive attitude has accentuated in this study. The role of communication and attitude of parents in obviating the use of noxious substances were concluded.

Materials and Methods

A quantitative descriptive study approach was used for the study. The aim of the study was to assess the level of parent-adolescent communication and parental attitude to communicate on substance abuse among their adolescent boys. Quantitative descriptive survey research design was adopted for this study, which is a non-experimental research design used to obtain data. The study was conducted in all out-patient departments of Chettinad Hospital and Research Institute, Chengalpattu district, Tamil Nadu. The target population for this study was parents of adolescent boys (10-19 years) between the age group of 28-45 years, visiting the out-patient department of Chettinad Hospital and Research Institute. Both male and female parents within the age of 28 to 45 years, who have male child between 10-19 years and available during the time of data collection period were included in the study. Whereas, parents who were not willing to participate in the study were excluded from the study.100 parents of adolescent boys, who met the inclusion criteria were considered to be the part of the study population. Purposive sampling technique in which the participants were selected according to the need of the researcher was utilized in the study. The study tool contains three parts. Part 1 consists of the personal information of the participant such as age, gender, religion, residence, education, occupation, socio economic status, type of stay of their child, duration spend for communicating with child, frequency of talk on the effects of substance abuse with child, mode of communication and type of substance abuse. Part 2 is Modified Parent-Adolescent Communication Scale that contains 10 items. Each item is provided with 5 responses like strongly disagree, moderately disagree, neither agree nor disagree, moderately

agree, strongly agree which is scored as 1,2,3,4,5 respectively. The total score for this session will be 50. A higher score indicates better communication between parent and adolescent. Based on the scores obtained by the sample, the communication between parent and their adolescent child can be classified into good, moderate and average. Part 3 is a self-structured five-point Likert scale which includes 10 statements to assess the parental attitude to communicate on substance abuse with their adolescent boy child. It consists of 12 statements, which will be scored as (strongly disagree=1, disagree=2, not sure=3, agree=4, strongly agree=5). The negative statements scored in the backward direction as (strongly disagree=5, disagree=4, not sure=3, agree=2, strongly agree=1). Maximum score was 60. The attitude of the parents to communicate on substance abuse with their adolescent boys was assessed through their responses and classified them into favorable, moderately favorable and unfavorable based on the total scores obtain by each of them. The validity of the tool was established in consultation with guide and one expert in the field of psychiatric nursing, one expert in pediatric nursing and one expert in psychiatry medicine.

Data collection:

Prior formal permission was obtained from the head of the department of Mental Health Nursing, Institutional Human Ethics Committee Clearance was obtained from Chettinad Academic of Research and Education for conducting the study. The pilot study was conducted in the out-patient department of Chettinad Hospital and Research Institute, Chengalpattu for a period of one week. Consent was obtained from the ethical committee and from the samples. Samples were selected using purposive sampling and demographic variables was obtained followed by level of communication and parental attitude to communicate on substance abuse using Modified PACS and self-structured parental attitude scale (five-point Likert scale) respectively. The research study was found to be feasible based upon the pilot study. This helped in refining and validating the developed tools. The questionnaire was tested in 10 participants before actual data collection and modified on basis of received feedback. The investigators modified few aspects of the developed tool. Validity and reliability were re-established. In the next phase the data collection procedure was done in the out-patient department of Chettinad Hospital and Research Institute, Chengalpattu district. The data was collected for a period of 1 week from 100 samples. Prior permission and consent was obtained from participants before conducting the study. In this study the researcher conducted interview for samples who met the inclusion criteria, for 20 minutes to collect data in personal information and Modified PAC Scale and self-structured attitude questionnaire to assess the level of communication between parent and adolescent child and parental attitude regarding talk on substance abuse. The collected data was analyzed and interpreted. The data was analyzed using statistical instruments.

Analysis:

It deals with the analysis and interpretation of data collected to assess the level of parent-adolescent communication and parental attitude to communicate on substance abuse among their adolescent boys. Statistical analysis was done by using descriptive and inferential statistics. Data were entered into Microsoft Excel and all entries were cross-checked against the questionnaire. The categorical data was expressed as percentage, whereas the continuous data were expressed as mean ± standard deviation. Chi-square test was used to test the association of different variables with socio demographic data of the participants. A probability value of < 0.05 was considered as statistically significant. The data was presented under the following headings, Diagram 1: Frequency and percentage distribution of level of parent-adolescent communication middle aged adults according to their demographic variables, Table 1: Frequency and percentage of parental attitude regarding talk on substance, Table 2:Mean, SD of parent-adolescent communication & attitude score on substance abuse among parents of adolescent boys, Table 3: Association between the levels of communication with selected demographic variables of parents of adolescent boys, Table 4: Association between the level of attitude with the selected demographic variables of parents of adolescent boys, Table 5: Association between the level of attitude with the selected demographic variables of parents of adolescent boys.

Findings

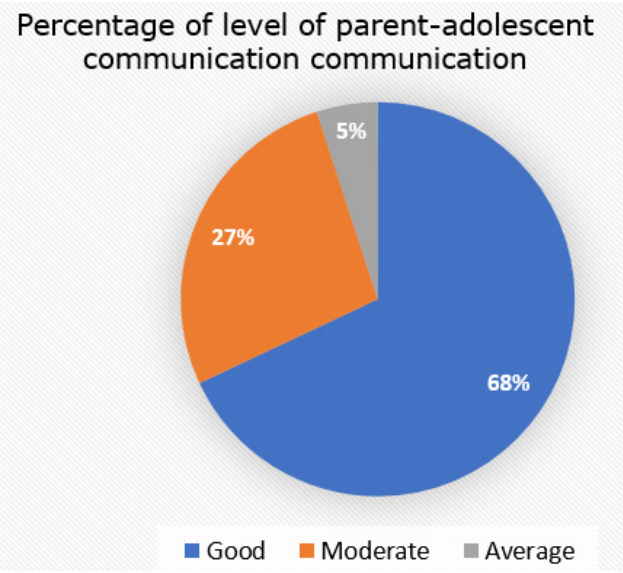

Fig 1: Frequency and percentage of level of parent-adolescent communication

Table 1: Frequency and percentage of parental attitude regarding talk on substance abuse.

Level of attitude	F	%
Favorable	87	87
Moderately Favorable	10	10
Unfavorable	3	3
Total	100	100

Table 2: Mean, SD of parent-adolescent communication & attitude score on substance abuse among parents of adolescent boys

S. No	Variable	Mean	Standard deviation	Mean Percentage (%)
1.	Communication	36.4	7.01	91
2.	Attitude	38.11	4.2	81.09

Table 3: Association between the levels of communication with selected demographic variables of parents of adolescent boys.

S.No	Demographic Variables	No. of samples	Level of communication			P value
			Good	Moderate	Average	
1.	Age of male adolescent in years					0.354
	a.10-14 years	32	25	12	1	
	b.15-19 years	68	44	17	1	
2.	Age of parents in years					0.961
	a.28-33 years	18	12	5	1	
	b.34-39 years	44	32	11	1	
	c.40-45 years	38	25	12	1	
3.	Gender					0.447
	a. Male	48	33	13	2	
	b. Female	52	36	15	1	
4.	Religion					*0.005
	a. Hindu	53	45	7	1	
	b. Christian	36	22	13	1	
	c. Muslim	11	5	4	2	

Continue.....

5.	Education of parent					
	a. No formal education	13	11	1	1	*0.049
	b. Primary	15	6	8	1	
	c. High school	20	9	10	1	
	d. Higher Secondary	36	29	6	1	
	e. Graduate and above	16	11	4	1	
6.	Occupation of parent					
	a. Private job	24	14	9	1	0.862
	b. Government job	8	4	3	1	
	c. Self-employed	37	19	17	1	
	d. Others	31	19	11	1	
7.	Type of substance abuse					
	a. Cigarette smoking	11	8	2	1	0.088
	b. Alcoholism	19	8	10	1	
	c. None of the above	70	50	19	1	
8.	Residing					
	a. Urban	30	24	5	1	0.147
	b. Rural	70	44	25	1	
9.	Socio economic status					
	a. Middle	83	55	27	1	0.124
	b. Lower	17	14	2	1	
10.	Type of stay of child					
	a. With parents	85	65	19	1	*0.0005
	b. With relatives	4	1	2	1	
	c. In hostel	11	3	7	1	
11.	Duration spend for communicating with child					
	a. Less than 1 hour	22	2	5	15	*<0.00001
	b. 1-2 hours	31	23	7	1	
	c. 2 hours and above	47	37	9	1	
12.	Frequency of talk on the effects of substance abuse with child					
	a. Once in a week	65	51	13	1	***0.029**
	b. Twice in a week	19	12	6	1	
	c. Never	16	6	9	1	
13.	Mode of communicating with child					
	a. Face to face	85	67	17	1	*<0.00001
	b. Telephonic conversation	12	1	10	1	
	c. Social-media	3	1	1	1	

Table 4: Association between the level of attitude with the selected demographic variables of parents of adolescent boys

S.No	Demographic Variables	No. of samples	Level of Attitude			P value
			Favorable	Moderately favorable	Unfavorable	
1.	Age of male adolescent in years					0.641
	a.10-14 years	37	31	5	1	
	b.15-19 years	63	57	5	2	
2.	Age of parents in years					0.962
	a.28-33 years	24	20	3	1	
	b.34-39 years	40	32	6	2	
	c.40-45 years	36	25	10	1	
3.	Gender					0.743
	a. Male	48	40	7	1	
	b. Female	52	46	5	1	
4.	Religion					0.548
	a. Hindu	53	4	5	1	
	b. Christian	36	29	6	1	
	c. Muslim	11	8	2	1	
5.	Education of parent					0.544
	a. No formal	13	11	1	1	
	b. Primary	15	12	2	1	
	c. High school	20	17	1	2	
	d. Higher Secondary	36	30	5	1	
	e. Graduate and above	16	10	5	1	
6.	Occupation of parent					*0.012
	a. Private job	24	20	3	1	
	b. Government job	8	3	4	1	
	c. Self-employed	37	33	2	2	
	d. Others	31	28	2	1	
7.	Type of substance abuse					0.342
	a. Cigarette smoking	11	8	2	1	
	b. Alcoholism	19	14	4	1	
	c. None of the above	70	62	7	1	
8.	Residing					0.560
	a. Urban	30	27	2	1	
	b. Rural	70	60	9	1	

9.	Socio economic status					0.333
	Middle	83	71	11	1	
	Lower	17	15	1	1	
10.	Type of stay of child					***<0.00001**
	a. With parents	85	81	3	1	
	b. With relatives	4	1	2	1	
	c. In hostel	11	5	5	1	
11.	Duration spend for communicating with child					0.540
	a. Less than 1 hour	54	42	10	2	
	b. 1-2 hours	36	32	3	1	
	c. 2 hours and above	10	8	1	1	
12.	Frequency of talk on the effects of substance abuse with child					*0.028
	a. Once in a week	65	61	2	2	
	b. Twice in a week	19	14	4	1	
	c. Never	16	11	4	1	
13.	Mode of communicating with child					*<0.00001
	a. Face to face	85	82	3	1	
	b. Telephonic conversation	12	4	7	1	
	c. Online Platform	3	1	1	1	

Discussion

Previous studies suggests that within the context of high levels of Parent-Child Connectedness (PCC), the communication is most effective. Whenever there is a high PCC between parents and their child, they tend to maintain an open communication as well as likely to have more frequent conversations. PCC have a very high influence on initiating the act of using any substance. Higher levels of PCC is found to be effective in declining substance use behaviors. With low levels of PCC, adolescents find use of substances as a form of rebellious act[1]. The behavior of parents can also have an impact in molding adolescents[5]. Communication between parent and their adolescent child was found to be inappropriate in cases where parents itself was abused to substances like cigarette and alcohol[6]. So, the behavior of parents towards their children and in terms of their own substance abuse can have a great influence on PCC and thereby on adolescent's substance abuse. The methods of communication have been also highlighted in previous literatures[1]. Open constructive conversations which involves both parents and child equally was found to be effective. The disparities with the frequency of talk on substance abuse between parents and their adolescent child can lead to ineffective or inappropriate communication. As adolescents is a period in which everything is taken casually, even though enough lectures are given by parents, they are unlikely to take those information on board[2]. Many studies have accentuated on frequency and quality of communication. More frequent communication is significantly associated with a higher positive attitude to refuse substance abuse. While Koning et.al (2014)

promoted the use of high quality conversations even though he found no clear association between the quality of communication and substance abuse. They have also pointed up that frequent conversations with adolescents is not only enough to protect against substance uses but should also have a high quality and constructive open communication where parents and child participate equally. In 2010, Ryan et.al suggested that general communication is protective against the use of alcohol whereas in 2001, Kingon mentioned that high levels of connectedness is protective against substance use. According to Darling and Steinberg's model (1993), communication becomes effective when PCC is high. This model also highlights between parenting behaviors and communication about substance abuse. Huver et. al in 2006 spotlighted on a distinction that on enforcing rules there will be lower rates of cigarette use; casual communication about rules is associated with higher rates of cigarette use[1]. A two-sided communication can create a feeling that they are also been listened to and contributing rather being lectured, which in turn is considered as a high quality[5]. In general, high PCC along with frequent high quality communication can be practical.

In the present study, not only communication and connectedness between parent and their adolescent child is assessed but also the attitude of parents to communicate on substance is also considered. Communication can be affected by the education of parents, type of stay of child, duration of communication between parent and child, frequency and mode of communication. Children when stayed with their parents can have a good communication. Parents may also notice even a small change in their child and can act appropriately. Parents can have an incessant communication without any obstruction with their child. But being with the child alone cannot maintain a good level of communication. Communication should be always constructive and open, so that both participants can be equally involved in it. The duration of communication can also be predominant in PCC. A diminished length of communication can be affected with lower PCC[1]. Frequency about talk on substance abuse can have an effect on adolescent substance use. It can insist the adolescent in refusing or retaining about the detrimental effects of substance abuse. But more frequent insistence can create a sort of reluctance in adolescents as they are been at the peak period of many psychological changes[8]. Always a direct face to face communication is always effective as it is more authentic. Moreover for a good level of communication, Parent- adolescent connectedness should be intense. Every aspect of communication is based on PCC. For a high quality, less problematic communication PCC serves as the base. In general the stay of child, duration spend on communication, frequency and mode of communication along with PCC and high quality open ended conversations is cardinal in sustaining and maintaining an eternal communication[1].The attitude of parents to communicate on substance abuse can also be crucial in indulging adolescent towards substance use[4]. Many factors including occupation of parent, type of stay of child, duration, frequency and mode of communication can be associated. A stressful occupation of parents can be related with a lower level of attitude to communicate regarding substance abuse. The vice versa can happen in parents who is self employe or with no particular occupation. Parents of adolescents staying away from their home may set a warning for their child but not too often. A higher rate in duration and frequency of communication can create a positive attitude in parents to talk on effects of substance abuse. Both frequency and duration can only be high when there is a satisfactory PCC so that a two-sided open conversation can be made in between parent and adolescents. Parents communicating with their child through telephones or social medias usually have a contrary attitude. They may always tend to keep the short term conversations from lectures on substance abuse. A positive attitude should be generated by the parents in order to protect their child from the ill effects of substance abuse. It can be concluded that a good high quality communication which is two-sided and a positive parental attitude on communicating about substance abuse foregrounded by an exceptional parent-adolescent connectedness can be pivotal and significant in sustaining parent-child relationship as well as hindering the adolescents from the deleterious effects of substance abuse.

Conclusion

The present study focused on how parent-adolescent connectedness and parental attitude

upshot on substance abuse among adolescent boys. An average percentage of communication among parent-adolescent child suggest a low level of PCC. It could be triggered by many facets like job of parents, involvement of social media, long distance education or peer group relationships. Parents who do not make a gruntled communication with their child either in an aspect of duration, frequency or closeness may pave the way for their on children to step into unwholesome venture. The unfavorable attitude to communicate with their children about substance abuse that still persist in the current society should be commuted. It is found to be the need of the hour to create an awareness to maintain an open ended, tenable, consequential and two-sided conversation among parents with their adolescents regarding substance abuse. Necessary interventions to improve, encourage and actuate parent's attitude as well as communication skills in forestalling substance abuse among their adolescent child has to be advocated.

Conflict of Interest: Nil

Source of Funding: Self

Ethical Clearance: The UG Committee clearance and Institutional Ethical Committee clearance was obtained from CARE. Permission was from the HOD of Mental Health Nursing Department, Chettinad College of Nursing as well as from the HOD of Community Health CHRI. The purpose of the study was explained to the participants and their written consent was obtained before the beginning of the study. The participants were informed that they were free to withdraw from the study during any stage of the study period and the confidentiality of the data collected for the research purpose will be maintained and will be utilized only for the study purpose.

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Original Research Article

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Relationship between Smartphone Addiction and Knowledge of Smartphone Addiction among Adolescents: Cross-Sectional Study

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Abstract

Background: The smartphone as a multifunctioning device has become an indispensable resource in everyone's life, especially among adolescents. Owning advanced smartphones and becoming overly reliant on them may result in behavioural addiction. Adolescents may overuse smartphones, sometimes knowingly or unknowingly, but it impacts their physical and mental health.

Objectives To find a relationship between smartphone addiction and knowledge of smartphone addiction among adolescents.

Materials and Methods: A descriptive correlation design where 209 adolescents (105 males and 104 females) were selected using multi-stage random sampling techniques from selected high schools, and the same sampling technique is employed to select the high schools. Personal variables include the general aspects of the adolescents. In order to assess the level of smartphone addiction, SAS-SV was utilized, and the researcher constructed self-administered questionnaires to assess knowledge regarding smartphone addiction.

Results/discussion: The majority (66.99%) of adolescents are at high risk for smart phone addiction, whereas 27.75% of adolescents were found to be addicted to smart phones. The majority (48.8%) of the adolescents possessed above the median level of knowledge of smartphone addiction. The correlation between smartphone addiction and knowledge of smartphone addiction scores of adolescents was found to be a negligible negative correlation ($r = -0.091$, $p > 0.05$), which is not statistically significant.

C**onclusion:** Smartphone addiction emerged as a behavioural addiction of an individual and independent entity, not based on the level of knowledge of smartphone addiction. Smartphone use can be affected by the socio-cultural contexts in which individuals live and the purpose of use their smartphone.

Keywords: Smartphone addiction; Knowledge of smartphone addiction; Adolescents

Introduction

The development of mobile technology has led to the smartphone becoming an essential tool in everyday life in the 20th century.[1] India had the second-most smartphone users, amounting to around 659 million, with China being the first-leading user with around 974 million, and this number continues to rise.[2]

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Owning advanced smartphones and users tending to become overly attached and preoccupied with their devices may lead to overuse of smartphones. Problematic use of smartphone is described as a type of behaviour, characterized by persistent utilization of the mobile phone that produces a variety of physical, social, and psychological harm and that can lead to addiction.[3]

Problematic smartphone overuse is known as 'smartphone addiction', but it has no uniform definition. Smartphone addiction is "an inability to regulate or control its own use of a mobile phone, which subsequently leads to negative effects on daily life.[4]Smartphone addiction is characteristic symptoms of obsessive behaviour, tolerance, withdrawal, and functional impairment in an individual.[5]

A core aspect of problematic use of mobile phones is that their use must cause dysfunction in a person's life.[6] A new public health problem is smartphone addiction. In many nations, the epidemic of smartphone addiction has emerged quickly and expanded from young adults and teens to children, particularly in Asian countries.[7] The prevalence of smartphone addiction among the participants was 33.0%, which was higher. Smartphone addiction was observed to be more prevalent among boys than girls.[8] Addiction to smartphones among adolescents may be accompanied by interpersonal problems, depression, stress, anger, and aggression as psychological impacts. Negative impacts on physical health include headache, earache, neck and back pain, discomfort in and around the shoulder, arms, wrist, and finger, eye strain, dryness of the eyes, loss of appetite, obesity, changes in the sleeping pattern, etc.[9] Smartphone addiction refers to the potential harm brought on by excessive and maladaptive use of smartphones. It is linked with a carving, compulsive desire for mobile use, creating interpersonal conflicts, and an inability to identify their own behaviour as being problematic.[10] For adolescents, a key area of functioning is their academic performance.[6] Several studies reveal that smartphone addiction is regarded as an emotional regulation approach for mood enhancement that requires cognitive effort.[10]

Adolescents involve quick physical growth, psychological development, and cognitive development. This affects their feelings, thinking, decision-making process, and interaction with the world around them. During this phase, adolescents develop behaviour that can protect their health or put it at risk, both now and in the future. In this regard, understanding the level of knowledge on smartphone addiction, which helps the researcher plan the intervention required to combat the problematic overuse of smartphones, is important. Hence, the researcher aims to find the relationship between smartphone addiction and knowledge of smartphone addiction among adolescents.

Materials and Methods

Study Design

This was a descriptive cross-sectional correlation study where adolescents were requested to answer self-administrated questionnaires about smartphone addiction.

Selection of Study Setting and Participants

The study participants were adolescents studying in high school either in the 8th or 9th standard, and their age group was between 13 to 16 years. In this study, a total of 209 adolescents were enrolled from selected high schools in Bangalore, Karnataka (India). These high schools were selected by using multistage random techniques (probability) in the study. In Stage I, stratified random sampling techniques were used in the selection of high schools. Administratively decentralized, the high schools in Bangalore district (urban) have a total of two zones, North and South, and each zone is divided into four blocks under the administrative control of BEOs (Block Education officers), like North: 1, 2, 3, and 4, and similarly South: 1, 2, 3, and 4. By using the lottery method, blocks N-1 and N-2 from the north zones and blocks S-1 and S-3 from the south zones were selected for study. From the selected blocks, one high school was selected using a computer-generated random table. Data collection was carried out between August 2022 to September 2022.

Ethical Considerations

Formal permission was obtained from the high school authority, and the Institutional Ethical Board approved conduct in accordance with the declaration of the research ethics committee (MECT/IEC/06/2019, dated 11/10/2019). Before

the collection of data, the informed written consent of the parent and assent of the adolescents were obtained.

Instruments

The self-administrated questionnaires used in this study consisted of three sections.

Socio-demographic Variables of the Adolescents

The socio-demographic variables were developed by the researcher, viz., age, gender, ownership of the school, class in which the adolescent is studying, religion, type of family, family income, parent's education and occupation, number of siblings, type of ownership of the phone. The duration of time to complete these data was approx. 8–10 minutes.

Smartphone Addiction Scale – Short Version (SAS-SV)

The Smartphone Addiction Scale-Short Version (SAS-SV) is a validated subjective tool (English version), developed by **Min Kwon**, to identify the level of smartphone addiction and to distinguish the 'high-risk for smartphone addiction' group from 'addiction' group. This tool includes 10 statements on smartphone usage on a 6-point Likert scale, with a score range from minimum 1 (strongly disagree) to maximum 6 (strongly agree). It categorizes the different ranges of scores for males and females, we can call "addicted" if the score was higher than 31in males and if the score more than 33 in females, and if the score was between 22 to 31 and 22 to 33 is referred "high risk for smartphone addiction" among male and female respectively,[11] score less than 22 is referred to as "No addiction" in both genders. The required time to complete was approx. 8–10 minutes. Cronbach's alpha correlation coefficient of 0.91 was obtained for the SAS-SV.[12]

Knowledge of Smartphone Addiction Questionnaires

The researcher developed the self-administered questionnaires on knowledge of smartphone addiction. It has a total of 26 questions, with four alternative options for each question, one of which is the correct answer. Each correct answer is awarded a score of '1', whereas a wrong answer is awarded a score of '0'. (Refer Table 5) Students needed around 30-35 minutes to answer 26 questions. This instrument was validated by 13 experts in the fields of child health nursing, pediatrics, and psychology. Cronbach's alpha correlation coefficient of **0.73** was obtained for knowledge questionnaires.

Data Collection Procedure

Prior permissions were obtained from selected high schools, the adolescents were identified using a multistage random sampling technique from selected high schools in Bangalore (an urban district) who fulfilled the inclusion criteria. Consent from the parent or legal guardian and assent from the participant were obtained. The participants were distributed the self-administered questionnaires (English version) on socio-demographic data, the SAS-SV and the Knowledge of Smartphone Addiction questionnaires. Total duration to answer these questionnaires, which lasted approximately 50–55 minutes.

Data Analysis

The data entry and coding were carried out using Microsoft Excel and transferred to SPSS software version 18. For categorical variables, descriptive univariant statistics such as frequencies, percentage, mean, and standard deviation were used. The correlation between smartphone addiction and knowledge of smartphone addiction was assessed using Karl Pearson's correlations. The chi-square test was used to find the association between socio-demographic characteristics and smartphone addiction and knowledge of smartphone addiction.

Results

Sample Characteristics

A total of 209 adolescents were screened for smartphone addiction. The distribution of the socio-demographic characteristics of adolescents is described in Table 1.

Table 1. Distribution of the Socio-demographic variables characteristics of the adolescents N=209

Socio-demographic characteristics		Frequency	%
Age (in years)	13-14	130	62.20
	15-16	79	37.80
Gender	Male	105	50.20
	Female	104	49.80
Type of School	Government	92	44.00
	Private	117	56.00
Class/Standard	8th Std	90	43.10
	9th Std	119	56.90
Type of Family	Joint	72	34.40
	Nuclear	121	57.90
	Single parent	16	7.70
Religion	Hindu	171	81.80
	Muslim	26	12.40
	Christian	7	3.30
	Any other	5	2.40
Monthly Family Income (INR)	Less than Rs. 20,000	120	57.40
	Rs. 20001-40,000	64	30.60
	Rs. 40,001-60,000	13	6.20
	More than Rs. 60,000	12	5.70
Father's Education	Not literate	20	9.60
	Primary school	60	28.70
	High school	79	37.80
	Pre-university College	30	14.40
	Degree	18	8.60
	Above degree	2	1.00
Mother's Education	Not literate	20	9.60
	Primary school	48	23.00
	High school	89	42.60
	Pre-university College	31	14.80
	Degree	18	8.60
	Above degree	3	1.40
Parent Occupation	Only Father is working	86	41.10
	Only Mothe is working	39	18.70
	Both father & mother working	78	37.30
	None of them working	6	2.90
No. of sibling	No sibling	30	14.40
	One	118	56.50
	Two	44	21.10
	Three & more	17	8.10
Ownership of mobile	Own mobile	57	27.30
	Using parent's mobile	150	71.80
	other	2	1.00

Assessment of Smartphone addiction among the adolescents

Findings show that the majority of 66.99% (140) of adolescents were found to be "high risk for smart phone addiction", followed by 27.75% (58) and 5.26% (11) of adolescents who were found to be "addicted to smart phone", and "not addicted to smart phone" usage, respectively. Among adolescents at 'high risk for smart phone addiction, 39.2% (82) were females and 27.8% (58) were males. Similarly, among adolescents with smartphone addiction, 41 (19.6%) were males and 17 (8.1%) were females. (Table 2)

Table 2: Levels of Smartphone addiction among the adolescents

Level of Smartphone Addiction	Male		Female		Total	
	Number	%	Number	%	Number	%
No Smartphone Addiction	6	2.9	5	2.4	11	5.26
High risk for Smartphone Addiction	58	27.8	82	39.2	140	66.99
Smartphone Addiction	41	19.6	17	8.1	58	27.75
G. Total	105		104		209	100%

Mean and Standard deviation of overall knowledge score of smartphone addiction questionnaires among adolescents

Findings show that out of 26 knowledge questionnaires (maximum score: 26), the obtained mean and median values were 11.57 and 11, respectively. (Table 3)

Table 3: Mean and Standard deviation of overall knowledge score of smartphone addiction questionnaires among adolescents

Knowledge questionnaires	Total No. of items	Min. Scored	Max. Scored	Range	Mean	Median	Mode	SD
	26	3	20	17	11.57	11	11	3.77

Assessment of knowledge regarding smartphone addiction among adolescents

Findings show that the majority, 48.8% (102) of the adolescents, were 'above the median level of knowledge on smartphone addiction', followed by 40.2% (84) and 11.0% (23) who were 'below the median' and 'median' levels of knowledge, respectively. (Table 4)

Table 4: Classification of adolescents on their level of knowledge regarding smartphone addiction

N=209

SL. No	Level of Knowledge	No. of respondent	% of respondent
1	Below Median	84	40.2
2	Median	23	11.0
3	Above Median	102	48.8
G. Total		209	100%

Assessment of adolescents to Knowledge of smartphone addiction questionnaires on area wise

Findings reveal that the overall knowledge score on smartphone addiction questionnaires was 44.6%, out of which the majority (51.66%) of correct responses were found on control and preventive measures of smartphone addiction and the least (34.21%) of correct responses were found on the impact of smartphone addiction on physical health questionnaires. (Table 5)

Table 5: Area wise responses of adolescents to Knowledge questionnaires on Smartphone addiction

Sl. No	Area	No. of items	% of correct response
1	General aspects of smartphone addiction	6	46.33
2	Impact of smartphone addiction on physical health	6	34.21
3	Impact of smartphone addiction on psychological health	5	42.3
4	Control/preventive measures of smartphone addiction	9	51.66
Grand total		26	44.6

Assessment of relationship between the smartphone addiction and knowledge of smartphone addiction among adolescents

Findings show that Karl Pearson's correlation statistics were computed to find the relationship between smartphone addiction and knowledge of smartphone addiction scores, which was found to be a negligible negative correlation ($r = -0.091$, $p > 0.05$), which is not statistically significant. (Table 6)

Table 6. Correlation between the smartphone addiction and knowledge of smartphone addiction among adolescents. N=58

Variables	Mean	SD	Pearson Correlation (r)
Smartphone Addiction	39.91	5.73	- 0.091*
Knowledge on Smartphone Addiction	11.72	3.69	

Association between smartphone addiction &knowledge of smartphone addiction and their selected Socio-demographic characteristics of adolescents

Findings revealed the association between smartphone addiction and socio-demographic characteristics of adolescents, revealing that there was a significant association found among variables such as gender and class/standard at 0.05 significance. (Table 7)

Findings related to the association between knowledge of smartphone addiction and socio-demographic characteristics of adolescents reveal that there is no significant association between them at 0.05 significance. (Table 7)

Table 7. Association between smartphone addiction & knowledge of smartphone addiction and their selected Socio-demographic characteristics of adolescents N=58

Sl. No	Socio-demographic characteristics	Association between smartphone addiction and Socio-demographic variables		Association between Knowledge of smartphone addiction and Socio-demographic variables	
		df	X^2	df	X^2
1	Age (in years)	2	4.88	2	3.87
2	Gender	2	14.13*	2	0.78

Continue.....

3	Type of school	2	0.66	2	5.00
4	Class/Standard	2	10.44*	2	6.37
5	Type of family	4	3.52	4	2.58
6	Religion	6	10.04	6	4.96
7	Monthly family income (INR)	6	3.19	6	2.17
8	Father's Education	10	11.19	10	9.37
9	Mother's Education	10	16.32	10	5.48
10	Parent occupation	6	3.10	6	7.97
11	Number of siblings	6	11.05	6	6.59
12	Type of ownership of smartphone	4	10.83	4	4.16

X^2 (2df, p<0.05) = 5.991; * - Significant @ 0.05

Discussion

The main objective is to determine the relationship between smartphone addiction and knowledge of smartphone addiction among adolescents. The cross-sectional study included a sample of 209 adolescents selected randomly from selected high schools in Bangalore urban district. Results of the study revealed that the majority (66.99%) of adolescents were found to be "high risk for smart phone addiction", and 27.75% of adolescents were found to be "smartphone addicts," and addiction was higher in males. In a similar study conducted in Delhi, smartphone addiction among the participants was 33.0% (95% CI: 27.2-38.6), and addiction was higher among boys (33.6%) than girls (32.3%) (p = 0.835)[10]. A study conducted in India revealed that 33% of male and 43% of female students were addicted to smartphones. This study result was found to contradict the present study, as female students were found to have greater smartphone addiction than boys.[13]

Study findings revealed that the majority, 48.8% of adolescents, possessed above the median level of knowledge on smartphone addiction. The overall mean knowledge score was 44.6%, out of which 51.66% correct responses were found on "control/ preventive measures of smartphone addiction" questionnaires. As a result of the descriptive survey study conducted in Jaipur to assess the knowledge on ill effects of cell phones among the adolescents and nearly48% had average knowledge, around 46% had poor knowledge, and only 6% had good knowledge regarding the ill effects of cell phones.[14] Another descriptive study to assess the knowledge regarding ill effects of excessive usage of computers and mobile phones on the health of adolescents reveals that 32% adolescents had good knowledge and 6% had excellent knowledge and only 2% had poor knowledge regarding ill-effects of excessive usages of mobile phones and computers.[14]

Finding of the present study revealed that the association between knowledge of smartphone addiction and socio-demographic characteristics of adolescents was found significant among the class/ standard in which they were studying. The study conducted by Pooja Joshi, Hardeep Kaur reveals the association of socio demographic variables with knowledge such as age, sex, education, family income, family type, religion, residence, father occupation, mother occupation was not significant at>0.05.[14]

In the present study the majority (51.66%) of correct responses were found on "control and preventive measures of smartphone addiction" and the least (34.21%) of correct responses were found on the "impact of smartphone addiction on physical health questionnaires". Similarly, study conducted by Bibra, A., & Yadav, Y.C reveals that area-wise mean score percentage on knowledge of adolescents regarding the ill effects of cell phones reveals that the highest mean percentage (55.20%) was found in the area of knowledge regarding "basic concepts of cell phones", and least mean percentage (35.50%) of knowledge score in the area of "effects of cell phones".[15]

Findings of the present study revealed that the relationship between smartphone addiction and knowledge of smartphone addiction scores was

found to have a negligible negative correlation ($r = -0.091$, $p > 0.05$), which is not statistically significant. Findings from this study indicate that the level of smartphone addiction is independent and may not have a relationship with the knowledge an adolescent possesses. Among the knowledge areas studied, the majority (51.66%) of correct answers were found in the area of control and preventive measures for smartphone addiction questionnaires. However, some adolescents are addicted to smartphones despite having better knowledge control and preventive measures for smartphone addiction, which makes it more alarming to contemplate the inclusion of self-control techniques or measures for safe usage of smartphones along with inculcating the knowledge of smartphone addiction. In this respect, the present research has a new and original quality.

Limitations

The expression level of smartphone addiction was obtained from the subjective expression of adolescents to the given statements, which may introduce bias, and the samples were drawn from the heterogeneous groups of high schools, viz., private, aided, local, and Government institutions which were following the state pattern curriculum. Another limitation in this study, the knowledge questionnaires included only four areas on smartphone addiction.

Implication of the study

The results of this study have significant implications for decision-makers in terms of keeping the interest of adolescents' health. though young age groups are very knowledgeable regarding the new advancement and technology of new era but they are not aware about its consequences.

A. Nursing Practice:

i. Assess knowledge of adolescents regarding ill effects of excessive usage of smartphone on the health.

ii. This result of study helps the nurse to enlighten their knowledge on ill effects of excessive usage of smartphone on the health and how to get rid of smartphone addiction.

B. Nursing Education:

i. The instructor may utilize the outcome as an example in the classroom to emphasize the value of health education.

ii. In light of this study, efforts must be made in the nursing education field to include more topics pertaining to the negative effects of advanced technologies, such as the health risks associated with smartphone use in the nursing profession.

C. Nursing Administration:

i. Nursing administrator have more responsibility as supervisor on creating awareness among adolescents regarding ill effects of excessive usage of mobile phones on the health.

ii. Nursing administration can depute nurses/ nursing students for various workshops, conferences and special courses; and in service education programs can be arranged for the nursing staff and students

D. Nursing Research:

i. This study can be effectively utilized by the emerging research for their reference's purposes.

ii. A vital component of nursing is research since it advances the field, creates new standards for practice, and builds a corpus of knowledge.

Recommendations

Intervention studies should be aimed at improving the healthier use of smartphones among adolescents through educational programs and training them to articulate and regulate self-control measures with the help of psychological interventions like mindfulness programs, meditation, pranayama, and yoga therapies to combat the overuse of smartphones.

Conclusion

The study helps to find a relationship between smartphone addiction and knowledge of smartphone addiction among adolescents. A negligible negative correlation between knowledge and smartphone

addiction, which is not statistically significant, suggests that Smartphone addiction emerged as a behavioral addiction of an individual and independent entity, without regard to their level of knowledge or education on smartphone addiction. Smartphone use can be affected by the socio-cultural contexts in which individuals live. Future research can investigate the effect of various psychological measures to improve the healthier use of smartphones and enhance their self-control abilities to prevent the problematic overuse of smartphone as smartphone addiction among adolescents.

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Enhancing Patient-Centered Care for Metabolic Screening and Engagement for Clients in a Rural Integrated Clinic

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Abstract

Background: Metabolic syndrome (MetS) affects approximately 34% to 40% of adults in the United States, leading to chronic diseases and an annual healthcare cost of $2,000 per person.

Local Problem: Practice gaps in metabolic screening were identified at Early Healthcare. Among patients, only 30% underwent weight and blood pressure measurements, 18% received lipid panel lab work, and 2% had waist circumference measurements.

Methods: This quality improvement initiative used four 2-week Plan-Do-Study-Act cycles. The approach integrated various frameworks, such as the Institute of Medicine's patient-centered care domain, to enhance metabolic screening and patient engagement with shared decision-making (SDM). Data from process and outcome measures were analyzed every 2 weeks using summary tables and run charts to determine the next test of change.

Interventions: Core interventions included screening MetS risk factors and patient engagement.

Results: Effective care scores increased from 55% to 98% (8-week average: 78%). MetS screening rose from 64% to 97% (8-week average: 82%). SDM increased from 57% to 100% (8-week average: 76%). Team engagement improved from 1.3 to 4.7. Patient satisfaction scores increased from 3.3 to 4.4 (8-week average: 4). MetS detection rose from 3% to 24% (8-week average: 18%).

Conclusions: The project's success underscores the value of patient-centered care interventions in improving patient outcomes for MetS risk and fostering a patient-centric culture within the healthcare system.

Keywords: metabolic syndrome, patient-centered care, shared decision-making, healthcare quality improvement, patient engagement

Metabolic syndrome (MetS) affects 34% to 40% of American adults [1].It contributes significantly to healthcare costs, totaling $157 billion annually [2]. Despite guidelines, screening in primary care remains suboptimal [3]. Geographical disparities exist regarding the prevalence of obesity, MetS, and diabetes [4]. Louisiana has high rates of obesity (36%), hypertension (39%), and diabetes (13%) [5].

Baseline analysis at Earley HealthCare in Louisiana revealed metabolic screening and lifestyle intervention gaps. Providers only measured the: weight (30%; n = 15 of 50), blood pressure (18%; n = 9

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of 50), lipid panel levels (30%; n = 15 of 50), and waist circumference (2%; n = 1 of 50). At baseline, providers' surveys showed mean scores for incorporating lifestyle changes (2.3) and providing education to patients (3.6) on a 5-point Likert scale.

Available Knowledge

MetS is a complex disorder characterized by interconnected factors such as elevated blood pressure, blood sugar, excess abdominal fat, and irregular cholesterol or triglyceride levels [6].Researchers have studied regional disparities regarding MetS [7], underlying mechanisms, its link with routine discrimination, and the impact of antipsychotic drugs on MetS [8]. According to the [5], Louisiana has the third-highest predicted prevalence of MetS among adults. The American Diabetes Association's [9] "Standards of Care in Diabetes—2023" and the National Institute for Health and Care Excellence's [10] Clinical Guideline CG178 provide recommended practices for managing MetS. The ADA [6] and National Institute for Health and Care Excellence [10] recommend lifestyle interventions, such as weight loss and physical activity, to help manage MetS. Pharmacological interventions may be necessary for specific components of Mets, such as hypertension or dyslipidemia, if lifestyle interventions are ineffective. The risk of future complications may be minimized with consistent monitoring of metabolic parameters, allowing for early detection and treatment of MetS [3, 7, 11].

Rationale

Patient-centered care, an Institute of Medicine (IOM) domain, guided this project, emphasizing patients' needs and integration into healthcare decisions [12, 13]. The shared decision-making model fostered active patient participation [14], and motivational interviewing influenced lifestyle choices [13]. These strategies aligned with the IOM's patient-centered domain, enhancing perceived control and engagement, and increasing adherence likelihood. The transtheoretical model—also called stages of change—was employed to promote healthier practices [15]. The project aimed to use a patient-centered approach to achieve 80% effective care within 8 weeks for patients at risk of MetS at Earley HealthCare.

Methods

Earley HealthCare is a rural integrated clinic in Louisiana serving approximately 639 patients monthly. The clinic team comprises three nurse practitioners, an office manager, and an off-site virtual assistant. The clinic uses Osmind as its electronic medical record (EMR) system. The demographics of the clinic are predominantly the following: female (88%; *n* = 563 of 639), self-pay (92%; *n* = 588 of 639), White (81%; *n* = 518 of 639), seekers of mental health services (56%; *n* = 358 of 639), and seekers of weight loss services (64%; *n* = 408 of 639). A considerable segment has received cosmetic injections (37%; *n* = 224 of 639).

This quality improvement project used a Plan-Do-Study-Act (PDSA) process consisting of four 2-week cycles. After each cycle, a test of change (TOC) was developed based on data collection and analysis [16]. This doctoral project was excused from review by the institutional review board at Frontier Nursing University because it does not qualify as human subjects research and meets federal requirements for quality improvement. No external funding was acquired for this project.

Interventions

Two core interventions were used in this project (Table 1). The first involved screening for metabolic risks using a metabolic screening tool (MST) based on guidelines from the American Diabetes Association [6]. The MST evaluated parameters such as body mass index, waist circumference, blood pressure, hemoglobin A1c, and HDL cholesterol levels and if the patient was on hypertension medication. The cumulative scores represented the overall metabolic risk status.

The second core intervention was patient engagement in shared decision-making. The shared decision-making tool (SDMT), adapted from the 9-item Shared Decision-Making Questionnaire [17], assesses patient involvement in healthcare decision-making. It fosters patient engagement and autonomy in managing health, using a 6-point Likert scale (0 = completely disagree to 6= completely agree) to gauge agreement with statements related to shared decision-making (Table 2). The effective care score was calculated by summing and then averaging

the SDMT items, providing an overall indicator of the degree of shared decision-making between the provider and patient regarding various mental health treatment options. These options included medications, lifestyle changes, exercise, diet, other mental health interventions, or even the choice of no treatment.

Study of the Interventions

Qualitative and quantitative data collection enabled precise fine-tuning and optimization of interventions. Quantitative metrics from the MST and SDMT were extracted, and patient satisfaction responses were logged per PDSA cycle. The quantitative data was entered into Google Forms and transferred to Excel for analysis. Data points were organized by 3-day intervals, with biweekly mean and percentage calculations. Qualitative data, including field notes and feedback, were studied for themes. Run charts and graphical representations were used for data interpretation, as well as aggregate data tables. Data analysis every two weeks catalyzed the TOCs for subsequent PDSA cycles. The project included a Likert-scale survey to assess the providers' knowledge, attitudes, and practices concerning metabolic screening and patient engagement with antipsychotic medications.

Measures

The project encompassed two process measures (Table 2), two outcome measures, one aim, and one balancing measure. The process measures focused on the frequency of utilization of the MST and the Shared SDMT. Outcome measures assessed the mean percentage of clients screened positive for MetS and SDMT scores, indicating the degree of shared decision-making between providers and patients (Table 2). The aim effect care mean percentage was obtained by summing the scores of each item, thus serving as a holistic indicator of the extent of shared decision-making between the provider and the patient concerning various mental health treatment options. The study aimed to operationalize a composite score calculated by the equally averaged score of four distinct components: the utilization rate of the MST, the utilization rate of the SDMT, the mean percentage of documentation of shared decision-making within the client's chart, and the mean percentage of scheduled follow-up appointments. The balanced balancing measure employed a 5-point Likert scale (1 = *very dissatisfied* to 5 = *very satisfied*) in a patient satisfaction survey, with a baseline of 3 and the goal of a mean score of 3.2. The project team conducted continuous assessments of various contextual elements with regular reviews and updates throughout the study to ensure the completeness and accuracy of the data.

Analysis

Quantitative data were collected biweekly and entered an Excel workbook. The project generated run charts from these data to monitor trends, shifts, and the number of runs, aiming to evaluate the performance of the core interventions and TOC. Identifying trends and shifts offered insights into process and outcome changes. Any special-cause signals detected on these charts indicated nonrandom variation, suggesting statistical significance. Observations, interviews, staff meetings, field notes, and patient feedback during engagement activities were sources for gathering qualitative data.

Results

This project aimed to achieve 80% effective, patient-centered care within 8 weeks for patients at risk of MetS. The results showed that the mean percentage of patients receiving effective care increased from 55% in Cycle 1 to 78% (Figure 1) overall; the goal was surpassed in Cycles 3 (84%) and 4 (98%). The run chart indicated a special-cause signal of change with a shift in effective care marked from the start of Cycle 3. Cycle 4 exceeded the 3.2 goal for the balancing measure, reaching 4.0 from a baseline of 3.2. Patient demographics were the following: 42% (n = 57 of 133) were aged 35 to 44 years, the majority were women 85% (n = 113 of 133), 81% (n = 108 of 133) identified as White, 95% (n = 127 of 133) spoke English as their primary language, and 87% (n = 116 of 133) were self-pay patients. The largest educational group had some college education but no degree, representing 29% (n = 39 of 133) of the population.

Metabolic Screening

Over the 8-week implementation, 82% (n = 133 of 162) of clients used the MST (Table 2), improving patient care. In Cycle 1, the team introduced the MST to the clients. The Cycle 1 utilization rate was 64% (n

=34 of 53). Among those who used the MST, 9% (*n* =3 of 34) were at low risk, 15% (*n* = 5 of 34) were at risk, and 2.9% (*n* = 1 of 34) tested positive for MetS; risk was unknown for 82% (*n* = 28 of 34). In Cycle 2, visual aids were implemented into metabolic screening procedures to enhance patient understanding, and participation in healthcare management. The TOC resulted in a utilization rate of 82% (*n* = 28 of 34), with 46% (*n* = 13 of 28) at low risk, 36% (*n* = 10 of 28) at risk, and 18% (*n* = 5 of 28) testing positive for MetS. Implementing an electronic MST in Cycle 3 led to a 97% (*n* = 33 of 36) utilization rate, with 21% (*n* = 7 of 33) at low risk, 55% (*n* = 18 of 33) at risk, and 27% (*n* = 9 of 33) testing positive for MetS. Implementation of telehealth metabolic screening took place in Cycle 4, with 97% (*n* = 38 of 39) utilization rate, with 24% (*n* = 9 of 38) at low risk, 53% (*n* = 20 of 38) at risk, and 24% (*n* = 9 of 38) testing positive for MetS. The most impactful overall TOC was the implementation of the electronic MST in Cycle 3.

Patient Engagement

Over the 8-week implementation, 76% (n = 151 out of 199) of clients used the SDMT (Figure 2), and the mean score was 4 (1 = very dissatisfied to 5 = very satisfied; Table 3). During Cycle 1, the SDMT was implemented, resulting in a 57% (n = 51 of 90) SDMT utilization rate and a mean score of 3.4. During Cycle 2, the introduction of healthcare provider communication training took place. SDMT utilization increased to 82% (n = 28 of 34), with a mean patient engagement score of 3.7. Cycle 3 showed further improvement with implementing patient education materials, with a utilization rate of 91.7% (n = 33 of 36) and a mean score of 4. Cycle 4 had the most impactful change; a social media patient education intervention led to the maximum utilization rate of 100% (n = 39 of 39) and the highest mean score of 4.5. The run chart indicated a special-cause signal of change with a shift in the SDMT utilization occurring in Cycle 3.

Team Engagement

To assess the team's engagement, the project leader used a pre-implementation survey to evaluate the providers' knowledge, attitudes, and practices regarding metabolic screening and patient engagement with antipsychotic medications. The survey employed a 5-point Likert scale (0 = very unconfident to 5 = very confident). The mean score prior to the PDSA implementation was a mere 1.3. The mean score was 4.7 postimplementation.

Table 1: Core Interventions

Core intervention	Plan-Do-Study-Act Cycle			
	1	2	3	4
Metabolic screening	Implement the MST	Implement visual aids	Implement electronic data collection	Implement telehealth metabolic screening
Patient engagement	Implement a SDMT	Implement healthcare provider communication training	Implement patient education materials	Implement social media education

Note. MST = metabolic screening tool; SDMT = shared decision-making tool.

Table 2: Core Intervention Measures

Core interventions			Baseline			PDSA 4			Project total		
Intervention	**Tool**	**Operational definitions**	**N**	**n**	**% or M**	**N**	**n**	**% or M**	**N**	**n**	**% or M**
Metabolic screening	MST	Process: no. of tools used / no. of patients eligible	53	34	63	39	38	97	162	133	82

Continue.....

		Outcome: no. of clients positive for metabolic syndrome) / no. of clients screened	53	1	4	38	9	14	133	24	18
Patient engagement	SDMT	Process: no. of tools used / no. of eligible clients	90	50	57	39	39	92	199	151	76
		Outcome: Mean score[a] on 6-point Likert scale			3			4.5			3.9

Note. MST = metabolic screening tool; SDMT = shared decision-making tool.

[a] A 6-point Likert scale was used, with 0 = *lowest* and 6 = *highest*.

Table 3: Share Decision-Making Tool

Likert scale [a]	PDSA 1 49			PDSA 2 28			PDSA 3 33			PDSA 4 38			Total 148		
	M	Mdn	Range	M	Mdn	Range	M	Mdn	Range	M	Mdn	Range	M	Mdn	Range
My provider made it clear that a decision must be made.	3.3	3	3	3.6	4	1	3.3	3	3	4.4	5	3	3.7	4	3
My provider wanted to know precisely in what ways I wanted to be involved in the decision-making.	2.5	3	3	3.1	3	2	3.5	3	3	4.6	5	2	3.4	3	4
My provider told me that there are various options for treating my medical condition.	3.2	3	2	3.4	4	2	3.8	4	2	4.6	5	2	3.8	4	3
My provider explicitly explained the advantages and disadvantages of each treatment	3.2	3	2	3.7	4	2	3.5	4	1	4.5	5	2	3.7	4	3
My provider helped me understand all the information.	4.1	4	2	4.3	4	5	4.3	4	0	4.6	5	1	4.3	4	3
My provider asked me which treatment option I preferred.	3.6	4	2	4	4	3	4.4	4	2	4.6	5	1	4.1	4	3

Continue.....

My provider and I thoroughly weighed the different treatment options	3.4	3	2	3.6	4	3	4	4	3	4.4	4	2	3.8	4	3
My provider and I selected a treatment option together.	3.6	4	2	3.9	4	3	4.6	5	1	4.3	4	1	4	4	3
My provider and I reached an agreement on how to proceed.	3.5	4	4	3.9	4	2	4.6	5	1	4.4	4	1	4	4	5
Mean score	3.3			3.7			4.1			4.4			4		

Note. PDSA = Plan-Do-Study-Act.

[a] A 6-point Likert scale was used, with 0 = *lowest* and 5 = *highest*

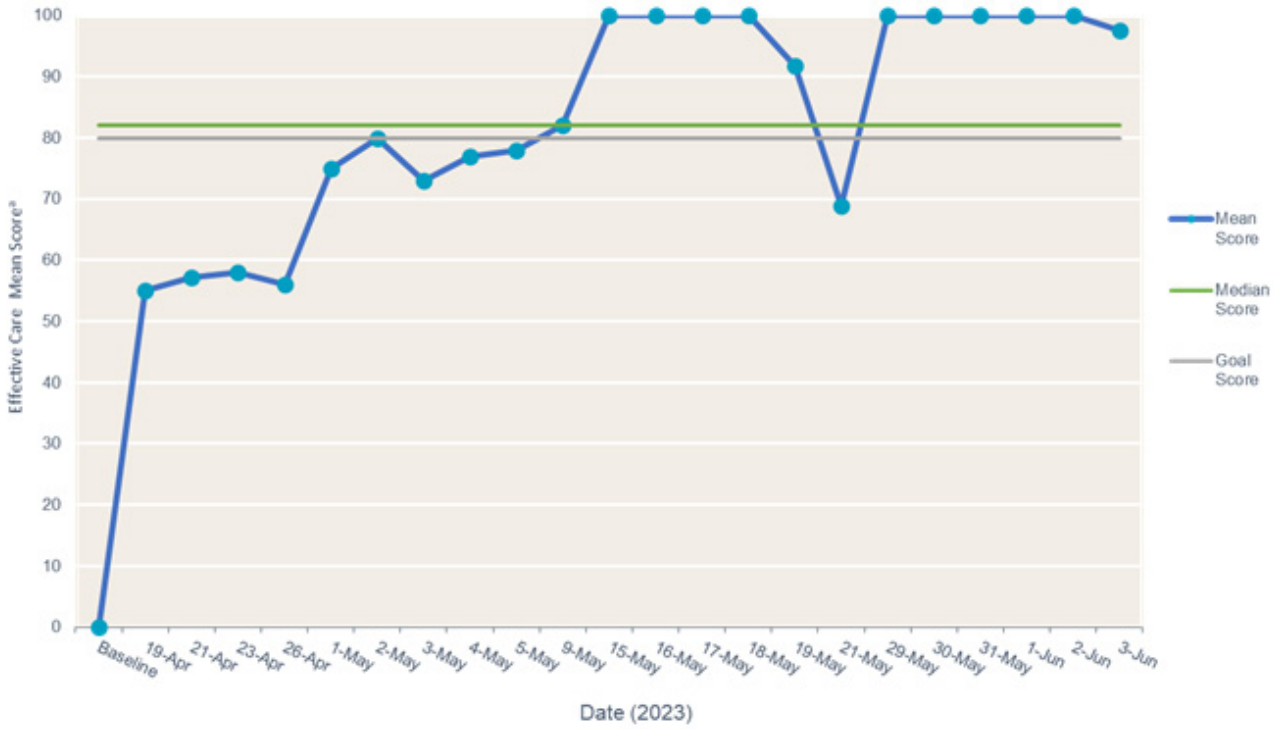

Figure 1: Aim Run Chart

a For the calculation of the effective care mean score, mean scores were added for metabolic screening tool use, shared decision-making tool use, shared decision documentation, and client follow-up scheduling and then divided by 4.

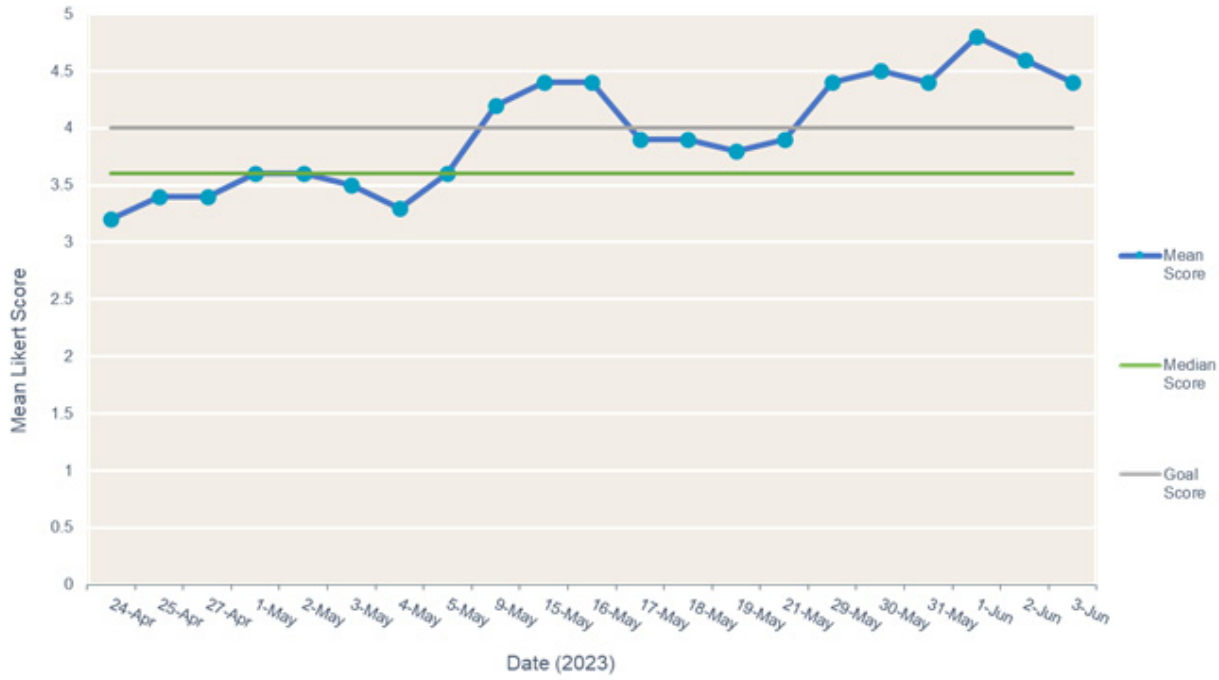

Figure 2: Patient Engagementa

a A 6-point Likert scale was used, with 0 = lowest and 6 = highest.

Discussion

Within 8 weeks, the project achieved patient-centered care for individuals at risk of MetS. The project surpassed its goals through interventions such as metabolic screening, telehealth, and social media education. The project's successes, indicative of its adaptability and alignment with healthcare trends, suggest the potential for replication and use of the tools in other settings, amplifying its overall impact on healthcare.

Interpretation

This quality improvement project implemented two interventions: metabolic screening and patient engagement. Metabolic screening used specific assessment tools endorsed in other research [7], visual aids [18], electronic data collection [19], and telehealth [19], resulting in an 82% utilization rate. MetS risks were identified in the screenings, positively impacting care. The patient engagement interventions were similar to successes in other research utilizing shared decision-making tools [17], provider communication training [17, 20], education materials [21], and social media [22]. Introducing social media education yielded 100% utilization of shared decision-making tools [17]. Collectively, these strategies improved patient satisfaction and enabled comprehensive MetS management [23]

The project's success demonstrates the effectiveness of the interventions. The 82% utilization rate of metabolic screening shows that combining assessment tools and methods successfully identified MetS risks, aligning with the literature on regular metabolic monitoring [3, 7]. Additionally, introducing social media education for patient engagement yielded 100% utilization of shared decision-making tools, reflecting the growing emphasis on patient-centered approaches, where shared decision-making and participation are critical for improving satisfaction and outcomes [17, 22].

Several contextual factors contributed to differences between anticipated and observed outcomes. Clinic relocation and EMR implementation influenced project progress. The relocation likely caused temporary disruptions, while EMR implementation necessitated staff training. Resistance to electronic data collection and patient unfamiliarity with telehealth explain outcome discrepancies and highlight the importance of considering contextual factors when implementing healthcare [24] .

Limitations

The unique context of a rural Louisiana clinic may limit the generalizability of this project's findings. Clinic relocation and a new EMR system could have introduced variability, impacting validity. The project minimized these limitations through open communication, collaboration, and a flexible design. The translation of these findings to different settings necessitates careful consideration of the specific characteristics of the patient population and unique infrastructural factors, given that they may not be directly applicable to other healthcare environments.

Conclusions

The project achieved its aim of increasing rates of metabolic screening and patient engagement, consequently enhancing the effectiveness of patient care. Its effectiveness underscores its potential utility in fostering patient-centered care. The flexible and adaptable design supports sustainability. While the results suggest the potential for application in other contexts, unique demographic and infrastructural factors must be considered. The project highlights the value of patient-centered interventions in healthcare practice and suggests further exploration in diverse settings. Future steps should focus on refining the intervention for broader implementation while emphasizing continuous improvement and patient-centered care. The project's success demonstrated the value of patient-centered care interventions in improving patient outcomes and fostering a patient-centric culture within the healthcare system.

Ethical Clearance

This quality improvement project was not subjected to review by the institutional review board at Frontier Nursing University. The project was categorized as exempt, as it did not qualify as human subjects research, adhering to the federal standards for quality improvement initiatives. This exemption demonstrates our commitment to maintaining ethical integrity, considering the distinct character of this project."

Source of Funding: The financial aspects of this project were self-managed, indicating independence in terms of funding. No external funding was acquired, ensuring the absence of financial influences on the project's design, implementation, and outcomes.

Conflict of Interest: The authors declare that there are no conflicts of interest related to this project. This statement underscores our commitment to transparency and integrity in the research process, ensuring that the findings and conclusions presented are the result of unbiased, objective quality improvement practices.

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