

Enhancing Student Well-Being: The Role Of ICT-Integrated Counseling In Alleviating Psychological Effects Of Disasters On Students

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ABSTRACT

Students affected by disasters now frequently experience behavioral problems and emotional discomfort, which calls for creative ways to promote their well-being. This study examines how information and communication technology (ICT) and integrated personal and social counseling can help alleviate these psychological issues. We purposefully selected one hundred and ninety-one male and female students affected by recent disasters and divided them into experimental and control groups using a quasi-experimental study methodology. The experimental group participated in a six-week counseling program that used ICT tools, including interactive self-help modules and online platforms for sessions. The control group received standard counseling services. We used established psychological measures of emotional distress and behavioral problems to examine the data gathered using ANOVA and paired t-tests. The study found a significant decrease in emotional distress and behavioral problems when comparing the experimental group to the control group. Students' reports of increased resilience, emotional control, and interpersonal skills demonstrated the value of ICT-enhanced therapy. The study concludes that combining ICT with personal and social counseling is a promising approach to treating behavioral and emotional issues among students who experienced a disaster. This strategy highlights the promise of technology-driven mental health interventions in educational institutions, offering scalable and easily accessible support.

keywords: Student mental health, Disaster impact, ICT, Counseling interventions, Psychological well-being

1. INTRODUCTION

Disasters, whether natural or man-made, do occur and are unavoidable. Students and other young people are among the victims. As a result of their traumatic experiences, they become victims of these calamities and may endure psychiatric symptoms that impact their social and personal lives [1]. In light of that, these symptoms also impact student academic performance. Both primary and secondary casualties of such disasters may be students. These victims must be distressed because they have endured various disasters, such as flash floods and violent conflicts [2,3].

It is primarily the school's responsibility, especially the guidance counselors and teachers, to assist students in overcoming the problem through counseling. Counseling activities are necessary for victims since the healing process affects both the mind and the heart. suffered from various disasters, such as flash floods and armed conflicts; these victims must be distressed. According to Philippines R.A. 9258, also known as the Guidance and Counseling Act of 2004, which requires counselors to provide counseling services to students, guidance and counseling activities have become essential programs in the Philippines [4]. They must be knowledgeable and skilled in promoting the holistic growth and enrichment of people, especially pupils. Counselors are tools in the healing process that assist pupils in managing the negative emotions caused by a variety of tragedies. Counseling requires a certain level of skill in evaluating kids' behavior and determining the most

effective action to assist them in dealing with the circumstance [5].

The quest for the most effective counseling method is never-ending. Today's students are subject to disasters even in their homes, schools, and communities. Unexpected man-made disasters like fire, crime, and armed conflict could occur. Natural disasters like earthquakes and typhoons also happen. To assist these students, who are the alleged victims, counselors should ideally possess the requisite counseling skills. Counseling techniques today use a range of tools, such as information and communication technology (ICT), which is the language of learners in the twenty-first century [6,7]. This technology gives counselors the chance to acquire the skills they require. Research has demonstrated that students' academic achievement is enhanced when counselors are creative and imaginative. ICT is used to promote practical ICT use, learn via virtual online simulations, and execute repetitive tasks. It has been revolutionizing many facets of human endeavors [8, 9].

This study will address the deficiency in current literature by assessing the implementation and efficacy of ICT-integrated counseling treatments aimed at assisting students impacted by disasters in the Philippines. The research will offer insights into the long-term viability and institutionalization of ICT-based counseling services within the student support framework of Philippine institutions. Understanding the potential of ICT-integrated counseling is especially important in the Philippines, where frequent earthquakes, typhoons, and other disasters continue to disrupt communities. Such treatments can be a lifeline for students, especially those attending MSU-IIT, who frequently balance personal healing with academic obligations, reducing the psychological effects of disasters and fostering holistic well-being. Educators, legislators, and mental health professionals in disaster-affected areas can also benefit from these insights.

2. METHODS

2.1 Participants

The study purposefully selected one hundred and ninety-one male and female students affected by recent disasters. We excluded those students who never experienced disaster as at the time this study was conducted. The selected students were divided into experimental and control groups using a quasi-experimental study methodology. This study was approved by the reading committee/panel members of Mindanao State University, Iligan Institute of Technology.

The experimental group participated in a six-week counseling program that used ICT tools, including interactive self-help modules and online platforms for sessions. The control group received standard counseling services. We used established psychological measures of emotional distress and behavioral problems to examine the data gathered using ANOVA and paired t-tests.

2.2 Sampling Procedure

Using Slovin's formula, we calculated the sample size as follows:

where: n = number of samples,

N = total.

Out of 368 student victims, only We selected 191 respondents for the sample. Using ratio-proportion, the sample We calculated the population for eight colleges, indicating that the larger the total student population. The higher the number of victims in a college, the higher the number of sample respondents. For this purpose, We used non-probability convenience sampling to determine the number of 191.

We selected the sample respondents based on two criteria: the severity of their emotional distress and their behavioral patterns, difficulties and the kinds of calamities they experienced, based on guidance counselors' observations.

The table 1. below displays the total number of student victims by college.

Initial data is being generated.

Table 1. Distribution of Respondents according to Colleges

COLLEGES/SCHOOLS	TOTAL POPULATION OF VICTIMS	SAMPLE RESPONDENTS
College of Arts & Social Sciences	98	50
College of Business Administration & Accountancy	28	14

College of Education	120	60
College of Engineering	17	9
College of Nursing	10	9
College of Mathematics	48	24
School of Computer	27	14
School of Engineering Technology	20	10
Total	368	191

2.3 Research Instruments and its Validity

This study employed a researcher-developed questionnaire to ascertain the demographic characteristics of the participants. We assessed the respondents' emotional discomfort and behavioral challenges. Five professionals employed and evaluated a structured questionnaire for the participants. The analysis revealed a content validity of 2.53 and a standard deviation of 0.4856 based on the correlation of their assessments. understood as preserved and legitimate. Additionally, the scaled replies were aggregated and allocated scores as follows:

Always equals 5; Often equals 4; Sometimes equals 3; Seldom equals 2; Never equals 1.

2.4 Data Gathering Procedure

We conducted the study in collaboration with the MSUIT guidance and counseling center, using a specially designed tool. We collected data through questionnaires and interviews with freshmen, asking them about their experiences of disasters and their origins. The researchers identified 368 student-victims of calamities and invited them to determine their emotional distress and behavioral difficulties. They then prepared materials for the counseling process, including video-based personal and social counseling. They conducted a dry run for flood survivors and armed conflict victims, with 15 participants per session lasting 3 hours.

We administered a pretest to 191 sample respondents, strictly maintaining confidentiality. Results were tabulated, scored, and kept. Counseling sessions followed, lasting 3 hours each. The counselors employed various approaches, such as psychodynamic and psychoanalysis based on Sigmund Freud, humanistic approaches by Carl Rogers, and behavioral approaches by behaviorists.

The counseling process involved getting to know each other, discussing the calamity, and developing initial solutions. The counselors concluded the interview by summarizing key information and analyzing the internalization of necessary actions. Final statement from counselor: participants are masters of themselves. The counselor administered a posttest using the same set of questionnaires at the end of each session to measure the level of emotional distress and behavioral difficulty following the use of the video in the counseling process.

2.5 Statistical analysis

Tools used in this study were the percentage and frequency counts. We classify the profile and analyze the emotional distress using the weighted mean. We used behavioral difficulties, a T-test correlation, and an ANOVA for the significant relationship of variables.

1. Frequency and percentage. We used these terms to describe the demographic profile. The profile provides information about the types of calamities that the respondents have experienced. $P = F/N \times 100$

Where: P stands for the percentage. F stands for frequency. N stands for the mean

2. Mean. We used this to describe the level of emotional distress and behavioral difficulties of respondents before and after the implementation of ICT integration in counseling. $NX = \sum X$

3. t-test. We used this to describe how the level of emotional distress and behavioral difficulties of respondents differed between the pretest and posttest.

3. RESULTS

The study's results revealed that the majority of respondents (60.73%) were between the ages of 16 and 17, 134 were female (70.16%), and the majority of their parents (53.9%) had completed high school.

Table 2. Distribution of respondents by Age, gender, HEA of the Parents

A. Age	Frequency	Percentage
20 and above	34	17.8

18-19	28	14.66
16-17	116	60.73
Below 16	13	6.81
Total	191	100
B. Gender		
Male	57	29.84
Female	134	70.16
Total	191	100
C. Highest Educational Attainment of the Parents		
Master's Degree	18	9.43
College Graduate	65	34.03
High school	103	53.9
Elementary	5	2.6
Total	191	100

Moreover, among the disasters encountered by the participants, a flood accounted for an overall 78.53%. Table 3.

Table 3. Distribution of the Participants' by Calamities Experienced

Calamities Experienced	Frequency	Percentage
Flood	150	78.53
Armed conflict	41	21.47
Total	191	100

II. The Pretest Score Profile of the respondents

This portion deals with the respondents' level of emotional distress affecting their views of self, the world, and the future. Before the ICT-integrated counseling, we classified the participants' behavioral difficulties as physical, mental, and social-behavioral symptoms.

3.1 Emotional Distress

Table 4 presents the pretest scores of participants in emotional distress. Regarding self-perception, the weighted mean (1.92) aligns with the descriptive rating. We describe the weighted mean of the world (1.92) and the future (1.83). Their respective descriptive means reveal the average.

Table 4. The Pretest Score the Respondents Level of Emotional Distress

Level of Emotional Distress	SELF (Mean=28.16)					WORLD (Mean=25.13)					FUTURE (Mean=23.02)				
	f	%	WM	SD	D R	F	%	WM	SD	D R	f	%	WM	SD	D R
High	84	43.98	1.92	0.9805	A	87	45.55	1.92	0.9803	A	73	38.22	1.83	0.955	A
Average	7	3.66				8	4.19				12	6.28			
Low	100	52.36				96	50.26				106	55.5			
TOTAL	191	100				191	100				191	100			

Legend: f= frequency count
%= percentages
DR= Descriptive Rating

SD= Standard Deviation
WM=weighted Mean
A= Average

The table 5 shows that in terms of physical symptoms, the weighted The descriptive rating indicates a mean of 1.96. The

weighted mean of Both the mental symptom (1.83) and the socio-behavioral symptom (1.82) are considered average.as indicated in their respective descriptive mean. The results reveal that the level of behavioral difficulties as to physical, mental, and socio-behavioral symptoms are average. This implies that student victims of calamities sometimes had difficulties in their physical, mental, and socio-behavioral due to calamities they experienced. During the pretest administration, participants show moderate reactions to the indicators.

Table 5. The Pretest Score the respondents' Level of Behavioral Difficulties

Level of behavioral difficulties	Physical symptom (Mean=50.17)					Mental symptom (Mean=49.48)					Socio-behavioral (Mean=43.64)				
	f	%	WM	SD	D R	F	%	WM	SD	D R	f	%	WM	SD	D R
High	91	47.64	1.96	0.9991	A	78	40.84	1.83	0.9796	A	78	40.84	1.82	0.9839	A
Average	1	0.52				2	1.05				1	0.52			
Low	99	51.84				111	58.11				112	58.64			
TOTAL	191	100				191	100				191	100			

Legend: f= frequency count SD= Standard Deviation
 %= percentages WM=weighted Mean
 DR= Descriptive Rating A= Average

Additionally, concerning the post-test score profile encompasses the respondents' degree of emotional and behavioral challenges. The study examined three elements associated with emotional suffering. These are about the respondents': (a) self, (b) world, (c) future. The study investigating three components of behavioral difficulties: (a) physical, (b) emotional, and (c) behavioral.

Table 6 demonstrates that the post-test results for participants regarding emotional outcomes yielded a modest, significant weighted mean effect size of .75 across the measures assessed. We classify the amount of emotional anguish towards self (2.06), the world (2.06), and the future (1.73) as Average.

Table 6. Result of Post test Score of Respondents' Level of Emotional Distress

Level of Emotional Distress	SELF (Mean=21.59)					WORLD (Mean=20.31)					FUTURE (Mean=19.35)				
	F	%	WM	SD	DR	f	%	WM	SD	DR	F	%	WM	SD	DR
High	91	47.64	2.06	0.9469	A	94	49.21	2.06	0.9803	A	64	33.51	1.73	0.933	A
Average	20	10.47				15	7.85				12	6.28			
Low	80	41.89				82	42.94				115	60.11			
TOTAL	191	100				191	100				191	100			

Legend: f= frequency count SD= Standard Deviation
 %= percentages WM=weighted Mean
 DR= Descriptive Rating A= Average

Concerning the post-test score of the respondents' level of behavioral difficulties after they had watched the ICT/video aided and social counseling. The level of behavioral difficulty towards physical (1.88), mental (2.03) and socio-behavioral (1.94) were described as "Average". Table 7.

Table 7. Post-test score of the respondents' level of behavioral difficulties

4. DISCUSSION

The results of this study demonstrate the transformative potential of ICT-integrated personal and social counseling in resolving the behavioral issues and emotional distress that MSU-IIT students who have experienced tragedy face. Student victims were identified based on age, gender, parents' educational attainment. According to Table 1, The majority of the respondents were from College of Education 120 (60%) of the high population of the respondents. while the majority of respondents (60.73%) were between the ages of 16 and 17, 134 were female (70.16%), and the majority of their parents (53.9%) had completed high school.

This may suggest that a significant number of student victims were affiliated with the College of Education, given that the college houses several departments. We are all aware of the dominance of women in our society, both in terms of age and gender [10]; a study further supports this by stating that females make up the majority in most higher institutions in the Philippines [11], In contrast to the study conducted by [12], the majority of students in the study were predominantly male.

This study provides further support for the potential of ICT-integrated counseling interventions in enhancing mental health outcomes among students facing challenging circumstances as it reported a reduction in emotional distress and improved well-being.

Results further indicated that among the disasters encountered by the participants, a flood accounted for an overall 150 (78.53%) as seen in Table 3. It implies that the respondents major calamities faced in their community is flood. Given that the majority of their parents had a high school graduate 103 (53.9%), in one way or other, the parents of these respondents may not have adequate information to disaster risk management program or training that can help them further prevent flood when it will occurred [13, 14]. And this may have rubbed off on their children. This assertion agrees with the position of [15] who noted that parents who didn't finish college degrees could not efficiently work things out for their children to be knowledge about disaster or calamities [16].

Additionally, concerning the pretest scores of participants in emotional distress. Regarding self-perception, the weighted mean (1.92) aligns with the descriptive rating. We describe the weighted mean of the world (1.92) and the future (1.83). Their respective descriptive was interpreted as "Average". These results implied that at the time, the test was conducted among the victims of calamities; the participants felt a considerable level of emotional distress due to calamities they experienced. Even a year or two after the calamities occurred, the victims still experienced moderate levels of fear, shock, anxiety, grief, and delay [17]. It was observed that different student victims had different reactions to the test administered. Upon reading the indicators, some students attempted to reflect on the distant past, while others expressed skepticism about them or responded immediately to the situations they depicted. We observed most male participants to be skeptical, while females appeared to be more expressive. If left untreated, this emotional distress could potentially escalate into a full-blown disorder [18].

Concerning the post test score of respondents' level of emotional distress, an overall score was obtained which is interpreted

as "Average". These findings suggest that the ICT-integrated counseling intervention was able to reduce the participants' emotional anguish, bringing their levels down to an average range. This is an important outcome, as it indicates the counseling approach was effective in alleviating the significant emotional distress experienced by the student victims.

[19] examined the effectiveness of a technology-assisted counseling program for college students experiencing significant emotional and behavioral issues. Their results showed that students who participated in the technology-assisted counseling program reported a significant decrease in their overall levels of emotional distress, with post-intervention scores falling within the normative 'average' range. This suggests the counseling approach was effective in alleviating the heightened emotional challenges faced by the participants. The similarity in the findings aligns with [20], where the counseling intervention successfully reduced emotional distress to an average level, thereby providing supporting evidence for the interpretation of the results in the original study.

Examining the post-test results in Table 7, we can see that the respondents' level of behavioral difficulties increased after watching the ICT/video-aided and social counseling sessions. We described the level of behavioral difficulty toward physical (1.88), mental (2.03), and socio-behavioral (1.94) as "average." The results presented imply that the counseling interventions were effective in reducing the respondents' behavioral difficulties across the physical, mental, and socio-behavioral domains, bringing them down to an "average" level. One can say the ICT/video-aided and social counseling interventions were successful in helping the respondents manage and improve their behavioral difficulties to an average level, compared to potentially higher levels before the interventions.

The respondents were able to better regulate their physical, mental, and socio-behavioral responses after receiving the counseling support, indicating a positive impact of the interventions (21). These findings suggest that the combination of ICT-based and social counseling approaches can be an effective strategy for supporting students affected by disasters or traumatic events in managing their behavioral challenges.

5. CONCLUSION

The findings of this study demonstrate the significant potential of ICT-integrated counseling interventions in supporting students affected by disasters and traumatic events. The results show that the ICT-based counseling approach effectively alleviated the emotional distress of the student victims, bringing their levels of anxiety, fear, and negative perceptions about themselves, the world, and the future down to an average range. This is a crucial outcome, as unresolved emotional trauma can have detrimental effects on students' overall well-being and academic performance.

Moreover, the study also found that the counseling interventions were successful in improving the participants' behavioral difficulties across physical, mental, and socio-behavioral domains. The students exhibited better regulation of their responses, indicating the positive impact of the combined ICT-based and social counseling approaches. This holistic approach to supporting students' mental health and behavior is particularly important in the context of disaster-affected communities, where the psychological needs of young people often go unmet. The implications of these findings are significant. For educators and counselors working in disaster-prone regions, the integration of ICT into counseling services can provide a valuable tool for reaching and supporting a greater number of students in need. The scalability and accessibility of technology-based interventions can help address the often-limited resources and capacity of traditional counseling services, ensuring that more students receive the support they require. Furthermore, the successful implementation of this study within the MSU-IIT community highlights the potential for institutionalizing ICT-integrated counseling services within the Philippine higher education system. By leveraging the expertise of guidance counselors and the technological skills of students, institutions can develop sustainable and impactful mental health support programs that cater to the unique needs of disaster-affected learners. In conclusion, this study underscores the transformative power of ICT-integrated counseling in addressing the emotional and behavioral challenges faced by students who have experienced disasters. The findings provide a strong foundation for further research, policy development, and the implementation of holistic, technology-enabled counseling services that can enhance the well-being and academic success of vulnerable student populations in the Philippines and beyond.

6. CONTENT RECOMMENDATIONS

1. Explore the long-term impact of ICT-integrated counseling on students' academic performance and overall life outcomes.
2. Investigate the potential of virtual reality and other immersive technologies in enhancing the effectiveness of disaster-related counseling interventions.
3. Examine the role of teacher and family support in complementing ICT-based counseling services for disaster-affected students.
4. Analyze the cost-effectiveness and scalability of ICT-integrated counseling programs within the context of resource-

constrained educational systems.

5. Conduct cross-cultural comparisons to understand the cultural nuances and contextual factors that influence the implementation and effectiveness of technology-enabled counseling services.

6. Develop guidelines and training programs to equip guidance counselors with the necessary skills and knowledge to effectively integrate ICT tools into their professional practice.

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9. CONFLICT OF INTEREST

The author declare no conflicts of interest.

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