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Nursing knowledge, Attitudes and practices toward suicidal risk behavior in Jeddah city

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Abstract

Background: Suicide is a significant public health issue. Yearly around 800,000 individuals end their own lives, and many more individuals attempt suicide. Nurses play an essential role in the health care sectors to encounter patients at risk of suicide behavior because nurses act on the frontlines and have the highest opportunities to recognize and interfere with suicide risk behavior.

Purpose: This study's main objectives are to identify psychiatric nursing knowledge, attitudes, and practices toward suicide risk behavior and determine the proactive measures related to suicide prevention.

Method: The present study is a quantitative method, a cross-section design.
The tool used to collect the data was a questionnaire. A convenience sample of 242 nurses who work in inpatient psychiatric and emergency departments in the Eradah and Mental Health complex were invited to participate in this study.

Results: The current study found that almost all nursing (79.3%) believe that they need to improve their knowledge, attitudes, and practices about suicide prevention and care, concerning nursing knowledge on how to manage and deal with the cases of suicide risk behavior, the results generally reveal that nursing has no sufficient knowledge, while they have positive attitudes and practices toward suicidal risk behavior.

Conclusion: The study encourages stakeholders to initiate nursing educational programs that involve practical and theoretical parts to all nursing degrees, aiming to raise their knowledge, attitudes, and practices about suicide prevention as well as to develop caring skills and establish nursing risk assessment tool to determine the level of suicidal risk behavior.

Keywords: Nursing, knowledge, attitudes, practices, suicide

1. Introduction

Suicide is one of the major public health issues around the world, where almost 800,000 people end their own lives yearly according to the World Health Organization (WHO) [1]. In the year 2016, suicide attempts have been confirmed as the 18th cause of death worldwide with a percentage of 1.4. Similarly, suicide has been considered as the second leading cause of death among the younger generation with an age of 15-29-year-old [1]. Suicide is defined as "self-injury with (either explicit or implicit) evidence that the person intended to die" [2].

A study conducted by Canady appears in Joint Commission

Journal in 2018 found that nearly 49 to 65 hospitals have inpatient suicides every year in the United States, wherein a wide basis has been estimated by 1,500 per year. Indeed, 75 to 80 percent were among psychiatric inpatients, and the estimated suicide rates were: 3.2 per 100,000 psychiatric inpatient admissions, while 0.03 per 100,000 non-psychiatric inpatients [3].

In fact, nurses act on the frontlines of the health care system that they can encounter patients at risk of suicide behavior and have the highest opportunities to recognize as well as interfere with suicide risk behavior [4]. However, most nurses are not satisfied, feel low-prepared, have little or no

training in evaluating, treating, referring to a suicidal patient, and afraid to talk to patients about suicide [5]. Additionally, Wang *et al.* [6] mentioned that inpatient suicide negatively affects nursing practice, which might lead to a significant stressor, as a substantial percentage of nurses have experienced it during their profession. Inpatient suicide strongly impacts nurses' personal life and job commitment. Consequently, some nurses have been targeted by depression, indifference, weak job performance, and had a low sense of accomplishment. Maris [7]. Has defined inpatient suicide "as the suicide of registered patients with psychiatric facilities or while on approved or unapproved leave".

Fortunately, suicide is often preventable. Gilje [4]. Emphasized that nurses are essential players in suicide prevention by applying some actions such as establishing strict policies, protocols and contributing to staff training programs in order to provide a safe environment for patients. Also, American Psychiatric Nurses Association (APNA) [8]. Added that nurses are potentially able to recognize the highly suicidal triggered individuals and set efficient interventions with monitoring the considered cases as well as evaluate the interventions' outcomes.

However, there is a need to improve nurses' knowledge, attitudes, and practices toward suicide patient risk behavior, through a (KAP) model, which serves as an educational diagnosis of the nurses [9].

Knowledge is defined as "Understanding of information about a subject that is getting by an experience or a study, either known by one person or by a group of people" [10]. While the term of attitude defined by Perloff [11]. as " a psychological construct, mental and emotional entity that distinguish the person and could be inherited, it is also known as "hypothetical construct," a concept that cannot be observed directly but can only be inferred from individual's actions".

Evidentially, nurses who are trained in suicide assessment and care have realized it is no different in assessing other kinds of diseases and can support those with suicidal risk behavior tendencies [5]. Therefore, providing suicide prevention training and educating nurses can improve their attitudes toward preventing suicide, enhancing clarity regarding their role in the care for suicidal patients, and increasing their general confidence in suicide preventive activities [12]. Moreover, training impacts positively on knowledge and attitudes as a crucial aspect that reflects on practice changes [13]. The term of practice is defined as "activities that are authorized, educated, and competent to perform. Also, set out in provincial/territorial legislation and regulations, the practice structure is usually complemented by sort of legal and ethical standards that been designed by jurisdictional nursing regulatory bodies" [14].

According to wide literature, there are studies specific about suicide risk behavior and nursing care. Furthermore, there are studies that focused only on one side the knowledge, attitudes, or practices. But there are limited studies that gather all three aspects (KAP).

So, the present study focuses on knowledge, attitudes, and practices of psychiatric nurses related to suicide risk behavior, which helps the researchers explore what nurses know about specific issues, how they feel, behave, and react with patients [9]. In Saudi Arabia, there is a shortage of research that addresses this significant and crucial issue. This study has been conducted in Jeddah city, and the authors hope that the study results will raise nursing knowledge, attitudes, and practices toward suicide patient prevention and care. Furthermore, this study will encourage stakeholders to initiate and design nursing educational programs and provide a safe environment to advance sound care in hospitals. The study's main objectives are to identify psychiatric nursing knowledge, attitudes, and practices toward suicide risk behavior. As well as to discover how nurses are interacting with a patient at risk of suicide behavior. Lastly, to determine proactive suicide prevention measures.

2. Methods
2.1 Study setting
The study was conducted in Eradah and mental health complex in Jeddah city. Eradah and mental health complex offer mental health services and Eradah (addiction) services. It is considered one of the leading specialized non-profit hospitals in Jeddah. The study was carried out from September 2019 to September 2020.

2.2 Study subjects
The nurses who work in Eradah and mental health complex were invited to participate in this study. Inclusion criteria included Saudi and Non-Saudi nurses, male and female; they are working in inpatient and emergency departments. In contrast, any nurses who did not meet the inclusion criteria were excluded from the study.

2.3 Sample size
The total number of nurses in inpatient and emergency departments in Eradah and mental health complex is around 345 at the end of 30/12/2020. The sample size was identified through the survey system program [15]. The required sample size is 182. The researchers have obtained around (242) valid responses from the target sample of the study. The calculator was set at the level of confidence at 95%, and the margin of error was 5%.

2.4 Study design:
The present research is a quantitative method, a cross-section design.

2.5 Sampling technique
The study used a convenience sampling technique, which is one type of non-probability sampling.

2.6 Study questionnaire
The study instrument examines the nurse's knowledge, attitudes, and practices toward suicidal patients. The questionnaire consisted of four parts. The first and the second parts were developed by the researchers built on an extensive literature review. Part I related to the sociodemographic data, including nine items: gender, age, marital status, nationality, qualification, experience, working shift, departments. Part II was focused on education and training courses and the existence of policies and procedures related to suicidal patients' nursing care. Part III was concerned with assessing the knowledge, attitudes, and practices of the participants. The questions consist of (38) items about suicide risk behaviour, (12) items knowledge, (13) items attitudes, and (13) items practices.

Knowledge and attitudes questions adapted from Chan [16]. The questionnaire was selected because it accomplishes what the researchers want to achieve. Chan approval was obtained to use, modify it to suit the nurses' and patients' needs. Multiple-choice questions measured the knowledge. Attitudes are rated on a 5-point Likert scale from strongly agree to disagree strongly. The practice questions developed based on literature and the American Psychiatric Nurses Association, essential competencies for assessing and managing individuals at risk for suicide [17].

2.7 Pilot study
The pilot's study was defined by Stewart [18]. As a "small study to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for a larger study." In the present study, thirty nurses were selected as a pilot, and their feedback was obtained to assess the questionnaire's validity and understanding.

2.8 The survey instrument reliability
Testing for reliability is essential as it refers to the consistency across the parts of a measuring instrument. According to Taherdoost [19]. The most used internal consistency measure is the Cronbach Alpha coefficient. It is well known that its value extended between (0- to 1). If the value is close to 1, that means the survey instrument achieves a high internal consistency among the items. In the current research, the overall survey instrument reliability is reaching (0.834), which indicates that the survey instrument is highly reliable, which confirms its suitability to achieve the research objective.

2.9 Data management
The data were analyzed using the Statistical Package for the Social Sciences (SPSS, version 24. IBM). Descriptive statistics were used to summarize and describe the learning needs, sociodemographic data and knowledge, attitudes, and practices questionnaire in addition to that Cronbach's Alpha used to examine the survey instrument reliability.

2.10 Ethical considerations
Approval attained from the Institutional Review Board (IRB), Directorate of Health Affairs, Jeddah, Ministry of Health, Saudi Arabia. The researchers assured that the participants confidentiality was maintained, and informed consent was obtained from all participants.

3. Results

Table 1: Sample according to socio-demographic characteristics (n = 242)

Socio-demographic Characteristics	Frequency	Percentage %
1. Gender		
Male	142	58.7
Female	100	41.3
2. Age group by years		
20-29	55	22.7
30-39	133	55.0
40-49	30	12.4
50-59	24	9.9
3. Marital status		
Single	175	72.3
Married	6	2.5
Divorce	10	4.1
Widow	51	21.1
4. Nationality		
Saudi	217	89.7
Non-Saudi	25	10.3
5. Qualification		
Diploma 2-5 years	112	46.3
Diploma 3-5 years	57	23.6
BSN	63	26.0
Master	9	3.7
PhD	1	0.4
6. Years of experience		
Less than one year	17	7.0
1-5 years	59	24.4
6-10 years	68	28.1
11-15 years	54	22.3
More than 15 years	28	11.6
Other	16	6.6
Socio-demographic Characteristics	**Frequency**	**Percentage %**
7. Working shift		
Day	99	40.9
Evening	60	24.8
Night	21	8.7
Rotating days/nights	23	9.5
Rotating days/evening/nights	35	14.5
Other	4	1.6
8.Psychiatric Departement		

Emergency	48	19.8
In- patient	194	80.2

Table 1 illustrates the study samples' socio-demographic data; regarding gender distribution, the male participants were overrepresented in this study. While concerning age groups, more than half of the participants are within (30-39) years. Concerning marital status, the single participants comprised the majority of the sample. According to nationality, Saudi nationality takes the largest part in the sample. Furthermore, related to participants' qualification level, (46.3%) of them have a diploma degree (2-5) year. The majority of the participants have (6-10) years of experience. With regard to the working shift, (40.9%) of the participants were working a day shift. Finally, the results show that most participants were working at the in-patient departments.

Table 2: Nursing experiences, training, and the policy and procedure toward suicide risk behavior (n = 242)

Items	Yes		No	
	F	%	F	%
Have you ever worked with patients with suicide risk behaviour?	215	88.8	27	11.2
There is a strategic planning in your workplace about patients with suicide risk behaviour.	**55**	**22.7**	**187**	**77.3**
There is a policy and procedure in your hospital about how to handle patients with suicide risk behaviour.	203	83.9	39	16.1
Have you ever attended a training course to raise your knowledge, attitudes, and practices about suicide prevention and caring?	139	57.4	103	42.6
Do you need to improve your knowledge, attitudes, and practices about suicide prevention and caring?	192	79.3	50	20.7

The results in Table 2 show that most nursing staff confirmed that they have experience and worked with patients with suicide risk behaviour. While they also show that almost all respondents agree that there is no strategic planning in the workplace regarding patients with suicidal behaviour. The majority of respondents asserted that there are a policy and a procedure in the hospital about how to handle patients with suicide risk behaviour. The results reveal that nearly all respondents believe that they need to improve their knowledge, attitudes, and practices about suicide prevention and care. Simultaneously, more than half of the participants confirmed that they attended a training course to raise their knowledge, attitudes, and practices about suicide prevention and care.

Table 3: Nursing knowledge toward the most important areas to be evaluated for the patient who plans to commit suicide (n = 242)

Mr. Ali lost his job recently. His wife has filed for divorce. Mr. Ali has been despondent for two weeks. He has been admitted to the hospital, accompanied by his brother, because of attempted suicide by cutting his wrist. On admission, he is fully conscious and with stable vital signs. However, he is depressed, and he frequently repeated that he wants to end his life. Based on this scenario, please answer questions 1 to 12						
Items	Yes		No		Mean	SD
	F	%	F	%		
Question 1	When assessing the Mr. Ali plan for suicide, the most important area to be evaluated is:	48	19.8	194	80.2	1.80	0.40
Answer	The availability of the means and the lethality of the method.						
Question 2	Based on the dynamics of suicide, which nursing intervention would be most therapeutic for Mr. Ali.	51	21.1	191	78.9	1.79	0.41
Answer	Encouraging verbalization of feelings of hopeless and helplessness						
Question 3	Identify a short-term goal related to Mr. Ali risk of suicide.	93	38.4	149	61.6	1.62	0.49
Answer	Mr. Ali will not engage in self-injury activities.						
Question 4	When Mr. Ali says, 'I do not know why you bother with me, nurse, I should not be taking up your time', the most appropriate response for the nurse is:	56	23.1	186	76.9	1.77	0.42
Answer	You feel very low at the moment, but I would like us to work together on how you are feeling.						
Question 5	When you talked to Mr. Ali's brother during visiting time, his brother said: "We can't understand why he (Mr. Ali) would do this (cutting wrist) to himself. We have given him all the support he ever wanted." Mr. Ali's brother's reaction reflects.	31	12.8	211	87.2	1.87	0.33
Answer	Denial.						
Question 6	When Mr. Ali showed signs of improvement and said, 'My brother has not visited me today, perhaps he is fed up with me' the most appropriate response for the nurse is:	92	38.0	150	62.0	1.62	0.49
Answer	You are obviously upset by him not coming, but I am sure that there will be an explanation.						
Question 7	An appropriate long-term nursing goal for Mr. Ali is that: Patient will.	35	14.5	207	85.5	1.86	0.35
Answer	Identify two acceptable alternatives to suicide.						
Question 8	when utilizing a cognitive framework in the care of patient with suicidal intent, the nurse encourages a patient to.	125	51.7	117	48.3	1.48	0.50
Answer	Identify negative thoughts and develop alternative ideas.						
Question 9	Which wording would be best for a no-suicide contract.	151	62.4	91	37.6	1.38	0.49
Answer	I will not, for any reason, accidentally or purposely, kill myself.						
Question10	The priority of nursing care for suicidal patient is.	144	59.5	98	40.5	1.41	0.49
Answer	One to one observation.						
Question11	What information is important for the nurse to obtain during the assessment of patient at risk for suicide?	118	48.8	124	51.2	1.51	0.50

Answer	History of suicidal ideation.					
Question12	During nurse suicidal risk assessment, the nursing should be aware about protective factors:	82	33.9	160	66.1	1.34	0.47
Answer	Internal and external ability to cope with stress, social support.					

Table 3 shows that nurses have less knowledge of how to manage patients with suicidal risk behavior. Whereas nursing knowledge was evaluated through a case study in multiple-choice questions, the vast majority of the participants selected the wrong answers.

Table 4: Nursing attitudes toward suicide risk behavior (n = 242)

	Number – Statement	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	Mean	SD	Ranking based on the mean
1	Most people who attempt suicide are lonely and depressed.	46.3	46.3	2.5	1.2	3.7	4.30	0.89	1
2	The higher incidence of suicide is due to the lesser influence of religion.	29.3	37.2	15.7	14.0	3.7	3.74	1.13	6
3	I have the appropriate knowledge and communication skills to help individuals who self-injury.	18.2	55.8	15.7	6.2	4.1	3.78	0.96	5
4	Overall, I am satisfied with the control I have in dealing with suicidal patient in my unit.	26.9	47.9	11.5	5.0	8.7	3.79	1.15	4
5	Suicide happens without warning.	22.7	31.0	16.9	21.1	8.3	3.39	1.27	10
6	People who commit suicide must have a weak personality structure.	14.0	31.0	22.7	24.4	7.9	3.19	1.18	11
7	Once a person survives a suicide attempt, the probability of his trying again is minimal.	11.6	25.2	26.9	26.9	9.4	3.02	1.17	12
8	If a culture were to allow the open expression of feelings like anger and shame, the suicide rate would decrease substantially.	19.4	48.3	17.4	7.9	7.0	3.65	1.09	7
9	If someone wants to commit suicide, it is his business, and we should not interfere.	9.1	18.2	9.9	24.4	38.4	2.35	1.38	13
10	Usually, relatives of a suicide patient had no ideas of what was about to happen.	16.5	46.3	17.8	12.0	7.4	3.52	1.13	9
11	Individuals who are depressed are more likely to commit suicide.	29.3	52.9	9.1	5.8	2.9	4.00	0.94	3
12	Once a person survives a suicide attempt, he deserves respect and dealing with as human being.	40.5	42.1	6.6	5.8	5.0	4.07	1.07	2
13	I talk to patients about their self-harming behaviour.	18.2	50.4	12.0	11.6	7.9	3.60	1.15	8
	Overall mean						**3.57**	**0.68**	

Overall, Table 4 indicates that the nursing attitude toward suicide risk behaviors is positively related to some statements and negative towards others. Regarding statement number (1), the majority of nursing staff (92.6%) agreed and strongly agreed that most people who attempt suicide are lonely and depressed. One of the positive nursing attitudes towards suicide risk behavior is statement number (12), almost all nursing staff (82.6%) agreed and strongly agreed that they deserve respect when a person survives a suicide attempt. When the participants presented their attitudes regarding the statement number (11) (52.9%), most of them agreed. The participants showed their attitudes regarding statement number (4), almost all of them (74.8%) strongly agreed and agreed. Furthermore, when participants showed their attitudes regarding statement number (3), most of them (74%) strongly agreed and agreed that they have the knowledge and communication skills to help individuals who commit self-injury. Regarding statement number (2), most respondents (66.5%) believe that the higher incidence of suicide is due to religion's lesser influence. The results of statement number (8) indicate that most participants agreed that if a culture allows the open expression of feelings like anger and shame, the suicide rate will decrease.

Table 5: Nursing perceptions regarding how frequently they practice toward suicide risk behavior (n = 242)

	Number – Statement	Always	Often	Some times	Never	Mean	SD	Ranking based on the mean
1	During handover, the nurse should be keeping suicidal patient under observation	80.6	13.6	3.3	2.5	3.72	0.65	1
2	The nurse works toward establishing a therapeutic relationship with patient at risk for suicidal risk behaviour	62.0	23.6	9.9	4.5	3.43	0.85	9
3	The nurse provides continuous nursing observation (one to one) if the patient has suicidal risk behaviour	69.0	22.3	5.4	3.3	3.57	0.74	3
4	The nurse must follow the policy and producer when handling suicidal risk behaviour	72.3	21.5	3.3	2.9	3.63	0.69	2
5	The nurse works with the patient to minimize the feelings of shame, guilt and stigma that may be associated with suicidality, mental illness, and addictions	59.5	26.0	11.2	3.3	3.42	0.82	10
6	The nurse provides care for a patient with suicidal risk behaviour in safe environment	64.5	23.1	7.9	4.5	3.48	0.83	7
7	The psychiatric nurse accurately documents suicidal risk assessment and intervention during key times	64.4	24.0	7.9	3.7	3.49	0.80	6

8	Ensure will take seriously all statements made by the patient that indicate, directly or indirectly, a wish to die by suicide, and/or all available information that indicates a risk for suicide	9.1	23.1	6.6	61.2	3.36	0.96	12
9	The psychiatric nurse collects accurate assessment information and report the risk to the appropriate persons (i.e. nursing supervisor, on duty M.D., etc.)	66.9	19.8	8.7	4.5	3.49	0.84	5
10	In nursing care plan the nurse works collaboratively with the patient to understand his/her perspective and meet his/her needs	61.6	23.8	11.6	3	3.43	0.82	8
11	The nurse seeks support through clinical supervision when working with adults at risk for suicidal ideation and behaviour to become aware of the emotional impact to the nurse and enhance clinical practice	57.0	30.2	7.4	5.4	3.39	0.84	11
12	The nurse use risk assessment tools – forms of suicide to determine the level of risk	1.2	21.1	10.3	67.4	3.55	0.73	4
13	Nurse participates in a root cause analysis (RCA) or failure mode and effect analysis (FMEA) when a suicide attempt or suicide death occurs on the inpatient unit	11.2	22.3	12.4	54.1	3.19	1.04	13
	Overall Mean					3.47	0.60	

The results in Table 5 show that the overall mean value indicates that almost all nurses confirmed that they always have positive practices toward suicide risk behavior. The detailed analysis of the participants' practices toward suicide risk behavior is outlined in the following. Regarding statement number (1), the majority of the nurses confirmed that they always keep a suicidal patient under observation during handover. While regarding statement number (4), nearly all nurses follow the policy and procedure when handling suicidal risk behavior. On the other hand, in statement number (3), almost all nurses guaranteed continuous observation for the patient with suicidal risk behavior. Furthermore, concerning statement number (12), more than half of the participants would never use risk assessment tools. Regarding statement number (9), most participants confirmed that the psychiatric nurse collects accurate assessment information and reports it to the appropriate person.

4. Discussion

Regarding the nursing experience with suicide risk behavior, the present study results show that most nursing staff (88.8%) confirmed they had worked with patients diagnosed with suicidal risk behaviors, but these results do not align with Giacchero Vedana et al. [20] results where they found that the majority of the participants reported having no experience with suicidal risk behaviors. In the current study, nursing participants were asked if they need to improve their knowledge, attitudes, and practices about suicide prevention and care. The results revealed that most of the respondents (79.3%) believe that they need to improve their knowledge, attitudes, and practices about suicide prevention and care. In contrast, an estimated percentage stated that (42.6%) of participants did not attend any courses in order to raise their knowledge, attitudes, and practices regarding suicide prevention and care. Overall, these findings are in accordance with the findings reported by Rebair and Hulatt [21], they mentioned that nurses need and strive to develop their interpersonal abilities in suicide awareness and prevention through training and education, which were also supported by Ramberg et al. [22] who suggested that providing suicide prevention programs to staff may improve their confidence and attitudes toward the preventability of suicide, enhancing their role in the care for suicidal patients. These improvements may contribute to the avoidance or decrease the frequency of suicide attempts in hospitals. These outcomes are in line with a previous study conducted by Manister [23]. Who confirmed that education and training programs were vital and significantly increased nurses' confidence in communication and interaction with patients.

During the study and referring to the nursing respondents' answers about their knowledge of managing and dealing with the cases of suicide risk behavior, it has been shown that nursing staff have no sufficient knowledge in dealing with various suicide risk situations. Continuously, Rebair [21]. Findings agree with these results by emphasizing that the lack of skills, training, and knowledge prevent the participants from engaging in conversation with the patients about suicide. Unlike Van Landschoot et al. [24], whose results represented that participants' knowledge about suicide risk behavior was high.

Moreover, regarding the nursing attitudes toward suicide risk behavior, the results revealed that almost all nurses have positive attitudes toward suicide risk behavior. The mean value has reached (3.57) with SD equal to (0.68). Similarly, Vine et al. [25] results broadly support these outputs, which have outlined that participants' attitudes towards suicide risk behavior were generally positive. In Fact, Crawford et al. [26] study provided striking results showing an obvious decreased negativity level between the staff and self-harmed individuals. Furthermore, in relation to the nursing practices toward suicide risk behavior, the current study results showed that the majority of the nurses' practices were positive. Briefly, the important statements that support the positive practices are that a greater number of nurses are keeping suicide patients under observation during handover. Also, almost all of them follow the policy and procedure while dealing with suicidal risk behavior. In addition to that, nurses always provide continuous nursing observation (one-to-one) if the patient has suicidal risk behavior. According to Bohan and Doyle [27]. study nurses have reported similar results, where they use a special observation process after an attempted suicide or continuous one-to-one observation within a commitment to the suicidal risk behavior policy and procedure. The vast majority of mental health professionals perceive themselves as highly skilled in dealing with suicidal patients. They have reported no hesitation in asking about patients' suicidality and are highly confident in their ability to detect and manage suicidal behavior successfully [24]. However, (67.4%) of the nursing staff participants in the present study confirmed they had never used risk assessment tools or forms to determine the level of suicidal risk behavior in their departments. The utilization of suicide risk assessment tools is a critical component of the comprehensive approach to

suicide risk assessment and improves staff confidence in assessing suicide risk. Yet, evidence has suggested that an efficient and effective evaluation can improve the staff confidence in assessing suicidality and lower the morbidity and mortality rates [28].

To finalize the discussion, in general, almost all nursing participants of the current study showed positive practices and attitudes toward suicide risk behavior, and nearly all of them are practicing what is required for handling suicidal risk behavior. Although there are implications for practice and further research stated, future nursing research needs to determine the factors that influence the nurses' knowledge, attitudes, and practices related to suicidal patients and the reasons for having insufficient knowledge regarding suicide risk behavior. More nurses should be prepared and supported by the comprehensive educational program to develop their knowledge and skills to increase their cohesion, self-confidence, and well-being when dealing with suicidal risk behaviors. Additionally, this study encourages nurses to use suicide risk assessment tools during psychiatric patients' care to enhance suicide prevention effectively.

4.1 Limitations
First, we implemented a convenience sample as a sampling strategy. It was not based on a random choice. Also, the study population did not represent the actual pattern of the whole population. The second limitation is a shortage of budget and lack of time due to the Covid-19 outbreak.

4.2 Recommendations
- The study encourages stakeholders to initiate and design nursing educational programs, including practical and theoretical for all nursing degrees, to raise the knowledge, attitudes, and practices about suicide prevention and develop caring skills to provide a safe hospital environment. Also, ensure that employees have updated policies and procedures frequently.
- The results highlight the importance of attending training and educational courses to raise nursing knowledge, attitudes, and practices about suicide prevention and care.
- Utilizing available or developing a valid and reliable nursing risk assessment tool to determine the level of suicidal risk behaviors during nursing care.
- Considering the diversity in training to improve nursing knowledge through role-play or case studies.

4.3 Conclusion
In conclusion, the study findings showed that nurses in the mental health hospital are not knowledgeable enough in managing patients with suicidal risk behaviors. There was no strategic planning in the workplace. Besides, the nurses not using risk assessment tools to determine the risk level is a weak point in nursing care. On the other hand, the results have been a significant positive in nurses' attitudes and practices toward suicidal risk behaviors.

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