



# Understanding Readiness Of Medical Laboratory Technology Student For Phlebotomy Practice In Real Patients; An Application Of Theory Of Planned Behaviour

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**Abstract.** The clinical practice of phlebotomy must be followed by all students of the Medical Laboratory Technology, even though the risk of phlebotomy complications is relatively small, in the other side, the anxiety among students in practicing phlebotomy in real patients in the hospital occurs in the high level. The purpose of this study is to identify the values of the TPB variables (attitudes, subjective norms, and behavioral control) related to the readiness of MLT students to participate in clinical practice in real patients and to determine the relationship between respondent characteristics and TPB variables. This is a descriptive correlational non-experimental research, with the number of respondents 52 students, and purposive data collection techniques. The results of the research on the attitude variable of the majority of respondents are in the very good category (83%), on the subjective norm the majority of respondents are in the very good category (62%), and on behavioral control, it is known that respondents who are in the good category 56%, less good 31% and very good 13%. There is a relationship between student activities with subjective norm abilities and there is a relationship between students' favorite subjects and behavioral control.

## INTRODUCTION

Clinical practice is a stage of learning that must be followed by all students of the Medical Laboratory Technology (TLM) study program. The Clinical practice aims to enable students to apply the knowledge gained during lectures on campus to real patients in health service facilities (facilities). Clinical practice of medical laboratory technology study program students is carried out in hospitals and clinical laboratories, as stated in the established curriculum.

Based on the regulation of Professional Standards for Medical Laboratory Technologists in Indonesia, states that one of the authorities belonging to a Medical Laboratory Technologist (MLT) is taking blood specimens for medical laboratory examination(phlebotomy). MLT graduates are required to be able to perform phlebotomies according to professional standards. 1,2

Readiness to practice phlebotomy on real patients in the hospital by students is influenced by behavioral factors, this is related to the risks involved in performing phlebotomy. WHO in 2010 reported that the most common risk associated with the practice of phlebotomy was the incidence of bruising and hematoma at the venipuncture site, which was 12.3%, nerve injury was less than 1%, and vasovagal attacks varied from mild to severe reported in 5, 3% of cases. 3 PDS Patklin Indonesia in 2012 noted that the most common risk of phlebotomy complications experienced by patients included hematoma (2-3%), then vasovagal (1%).

Even though the risk of phlebotomy complications is rare, this has created anxiety among students. Otto in his research reported that 63% of health students were classified as experiencing high anxiety when carrying out the



practice. The preliminary study reported that out of 10 students felt anxious about the occurrence of patient complaints due to phlebotomy complications. Otto explained that anxiety in practicing phlebotomy was experienced by most phlebotomists at the beginning of their careers. This anxiety was also related to the risk of work accidents that could be experienced by a phlebotomist, namely needle sticks related to HIV/AIDS infection and hepatitis.

Theory of Planned Behavior (TPB) by Ajzen 1988 is an instrument designed to assist research in the health sector, to measure psychological and non-psychological aspects of behavior. TPB is effective for measuring individual behavior by using three predictor variables, namely attitudes, subjective norms, and behavioral control. The purpose of this study was to identify the values of three behavioral predictor variables, namely attitudes, subjective norms, and behavioral control, and to find the relationship between respondent character and attitudes, subjective norms, and behavioral control to understand the readiness of medical laboratory technology (MLT) students to take part in phlebotomy practice in real patients.

## METHOD

This type of research is a non-experimental study with a correlational descriptive research design by measuring the TPB variables in the form of attitudes, subjective norms, and behavioral controls regarding the readiness of TLM to participate in clinical practice in phlebotomy, as well as looking for a significant relationship between the characteristics of respondents and TPB variable. Respondents in this study were 52 students of medical laboratory technologists as a respondent. The sampling technique used purposive sampling. The statistical analysis technique used is chi-square.

## RESULT

The following are the sociodemographic characteristics of the respondents. The characteristics of the respondents studied were age, year of study, gender, activity, practical experience, and favorite subjects. Results in Table 1.

**Tables 1. Characteristics of Respondents**

Respondents Characters	N	%
<b>Age</b>		
≤ 20 years old	35	67.3
> 20 years old	17	32.6
Total	52	100
<b>Student in year</b>		
First year	21	40.3
Second year	21	40.3
Third year	10	19.2
Total	52	100
<b>Gender</b>		
Male	13	24.5
Female	40	75.5
Total	52	100
<b>Activity</b>		
Unemployed	38	71.7
Employed in clinical laboratory	13	24.5
Employed in another field	2	2
Total	52	100
<b>Clinical practice experience</b>		
Yes	37	69.8
No	16	30.2

Total	52	100
<b>Favorite subject</b>		
Hematology	31	58.5
Bacteriology	4	7.5
immunology	1	1.9
Parasitology	7	13.2
Clinical chemistry	8	15.1
Toksikology	1	1.9
Mixology	1	1.9
Total	52	100

Based on Table 1. it is known that most of the respondents are over 20 years old (67%), and a small portion is students in their 3rd year (19.2%). Most of the respondents were women (75.5%) and when viewed from their activities, it was found that 71.7% were not yet working, 24.5% were part-time students in clinical laboratories and 2% worked outside the TLM field. Furthermore, 69.8% of respondents answered that they had done fieldwork practices, and the majority of respondents chose the hematology course as their favorite subject (58.5%). Based on these data it is known that most of the respondents are individuals in the final stage of adolescence. In the final phase of adolescence, an individual has made progress in understanding the situation and responding to his environment. 7 Based on the characteristics of the data, it is also known that some respondents have worked in laboratory clinics and the majority of respondents chose subjects hematology.

The following are the results of the identification of the three predictor categories of TPB variables and the relationship between respondent characteristics and TPB variables (attitudes, subjective norms of behavior control) related to the readiness of medical laboratory students to take part in clinical practice in the field of phlebotomy. The results are presented in Tables 2 and 3.

**Tables 2. TPB Variable Predictor Categories (Attitudes, Subjective Norms, and Behavioral Control) in Readiness Of Medical Laboratory Technology Student For Phlebotomy Practice In Real Patients**

Variable	Very Good	Good	Poor
Attitudes	83%	17%	0%
Subjective Norms	62%	38%	0%
Behavioral Control	13%	56%	31%

According to Table 2 above, it is known that in the attitude variable, the majority of respondents are in the very good category (83%), while the good category is 17% and in the poor category 0%. In the Subjective Norms, the majority of respondents are in the very good category (62%), while the good category is 56% and the poor category is 0%. Then in the Behavioral Control majority of respondents are in a good category (56%), while the very good category is 13% and the poor category 31%.

**Tables 3. Relationship Between Respondent Characteristics And Readiness Of Medical Laboratory Technology Student For Phlebotomy Practice In Real Patients**

Respondents Characters	Variable	Sig
Age	Attitudes	0.544
	Subjective Norms	0.074
	Behavioral Control	0.08
Student in year	Attitudes	0.745
	Subjective Norms	0.490
	Behavioral Control	0.302
Gender	Attitudes	0.903
	Subjective Norms	0.168

Activity	Behavioral Control	0.652
	Attitudes	0.671
	Subjective Norms	0.026*
	Behavioral Control	0.210
Clinical practice experience	Attitudes	0.348
	Subjective Norms	0.111
	Behavioral Control	0.142
Favorite subject	Attitudes	0.901
	Subjective Norms	0.504
	Behavioral Control	0.002*

According to table 3, it is known that the respondent's activity significantly influences subjective norms and their favorite subject (hematology) influences behavior control.

## DISCUSSIONS

The attitude variable relates to the individual's attitude towards the object to be worked on. The higher the attitude score, the more prepared the respondent is to do a job. The formation of attitudes is related to the level of knowledge and information about the situation received by students before clinical practice, meaning that the more complete the information received by students, the better their readiness. In the subjective norm variable, it is known that the majority of respondents are in the "very good" category (62%), followed by "good" (38%). Subjective norms are individual perceptions of the expectations of influential people and the existence of regulatory demands in their lives (social pressure) regarding whether or not a certain behavior is performed. The social pressure identified in this study is pressure from colleagues, rules that apply in the phlebotomy sampling room, and social pressure in the form of responsibility to maintain the good name of the place where clinical practice is carried out in carrying out phlebotomy. The formation of subjective norms is influenced by two things: the motivation to comply with demands and the desire to imitate or follow the behavior of other people around them. In Table 3. According to Table 3, it is known that the respondent's activity significantly influences the subjective norm value of the respondent. In the behavioral control variable, it is known that the respondents who are in the "good" category are 56%, 31% are poor, and 13% are very good. The behavioral control variable is a description of the respondent's feelings (self-efficacy) related to his ability to practice phlebotomy. The aspects analyzed include feelings of anxiety, tension, inferiority, and self-perception about the adequacy of the material he has received while studying on campus related to phlebotomy. Albert Bandura explained that behavior control parallels self-confidence. Someone who has strong self-confidence in doing an activity makes the activity very easy to complete. Furthermore, it is known that favorite subjects affect the value of the respondent's behavior control. In Table 1, it is known that the favorite subject of most of the respondents is hematology. Learning hematology equips students with the ability to determine various methods of hematology laboratory examination as well as apply analytical procedures to various types of blood specimens. This is in line with the competence of phlebotomy clinical practice, so it can be concluded that the preference of the majority of respondents for hematology has formed self-confidence in students, which has implications for the formation of good behavior control abilities in phlebotomy clinical practice.

## CONCLUSION

1. In the variable of attitude the respondents who are in the very good category are 83% and the good category is 17%. In the subjective norm variable, it is known that the respondents are in the very good category 62% and 38% good, and then in the control behavior variable is known that the respondents who are in the good category are 56%, 31% are not good and 13% are very good.
2. There is a relationship between student activity and the ability to establish subjective norms related to readiness to do phlebotomy practice in real patients. There is a relationship between students' favorite subjects and the ability to control behavior related to readiness to do phlebotomy practice in real patients.





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