

A STUDY OF TANNING OPERATORS IN THE STATE OF KANSAS:
THEIR ATTITUDES AND STATED PRACTICES REGARDING
MINORS AND TANNING

A research project by

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I hereby recommend that the research project prepared under my supervision by Monica Apollo entitled A Study of Tanning Operators in the State of Kansas: Their Attitudes and Stated Practices Regarding Minors and Tanning be accepted as partial fulfillment for the degree of Master of Physician Assistant.

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ABSTRACT

Introduction: It is estimated that thirty million Americans will tan this year and about two million of them will be teens. Exposure to ultraviolet rays seems to be the most important environmental factor in developing skin cancer. About twenty-three states have passed some type of legislation on youth access to tanning. Kansas has no regulations on youth access to tanning. Few studies have been done regarding whether tanning operators support or oppose youth access restrictions.

Methodology: The purpose of this study was to evaluate the basic demographics, attitudes and stated practices regarding youth access to tanning among Kansas tanning operators. A survey was mailed to Kansas tanning facilities regarding these questions and results were analyzed using descriptive statistics.

Results: The survey response rate was 28% (n=651). The majority of the respondents felt that there was “none to a little risk” with indoor tanning (60%). Most did feel that someone can be too young to tan and 65% had discouraged one from tanning because of their age. Results indicate 92% of operators support written parental consent, yet they are not enforcing that a parent needs to accompany them on their first visit.

Conclusion: The youth population needs to be aware of the associated risks and increased correlation of skin cancers with indoor UV tanning. By surveying a selected group of tanning facility operators in Kansas; this study provided insight into their perceptions regarding youth access to tanning. It was shown that the majority of operators believed that written parental consent and age regulations for indoor tanning should be required. This study also illustrated tanning facility operators’ attitudes and stated practices regarding youth access to tanning in Kansas. In the end, this study may

be helpful to legislators in regards to knowledge about whether tanning operators' support or oppose tanning regulations.

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INTRODUCTION

In today's society tan skin is socially desirable for most people, including teenagers. A study done by the American Academy of Dermatology found that the majority of men and women surveyed felt that a tan gave them a "healthy" appearance and they felt better with tan colored skin.¹ For this and various additional reasons, indoor tanning has become popular since it only takes about twenty minutes or less, two to three times a week for one to attain a desirable tan. This helps explain the \$5 billion dollar indoor tanning industry that continues to expand. Nearly 30 million people in the United States tanned indoors in 2006, which represented a 27 million increase since 2002.² Also, it has been estimated that one million Americans visit a tanning salon on any given day. The majority of those who tanned indoors continued to be in the 18-49 age group, 70 percent of which were women and 50 percent of them in the age range of 20-39.² Despite these numbers it is currently estimated that 2.3 million teens visit a tanning salon at least once per year.³

Teens seek tanning because tanned skin is portrayed as beautiful and healthy in our society.⁴ For example, it is common to find more teenagers in tanning parlors throughout the United States around spring break or school dances. Also, one study demonstrated having friends who tanned was strongly associated with the use of tanning beds.⁵ Adolescents and adults still tan despite the health risks associated with it possibly due to a lack of education about these risks. It has been also shown that teens may be especially susceptible to skin cancer because cells of younger individuals divide and change more rapidly than those of adults.³

Long term sun exposure is associated with increased risk of squamous cell carcinomas (SCC) and basal cell carcinomas (BCC), and growing evidence shows that indoor tanning use is associated with the development of malignant melanoma.^{6,7} Nationally, there are more new cases of skin cancer each year than the combined incidence of cancers of the breast, prostate, lung, and colon.⁸ Also, it is estimated that by 2010 one in fifty Americans will have melanoma.³ Exposure to ultraviolet (UV) rays appears to be the most important environmental factor in developing skin cancer. This includes UV rays from the sun and tanning beds which contain UVA rays. Nonetheless, regular exposure to UV rays from the sun with added UVA rays from tanning beds is equally worrisome. Research shows that blistering sunburns and overexposure during childhood greatly increase the chances of developing skin cancer later in life.⁹ Skin cancer is a largely preventable disease when sun protective practices and behaviors are consistently applied and utilized.¹⁰

In the last few years the subject of minors and indoor tanning has been at the forefront of a national debate with state legislators. In 2005 the World Health Organization released a recommendation that no persons under the age of eighteen use indoor tanning beds.¹¹ Since research has shown sun exposure in childhood and the teenage years can be so damaging, policymakers in some states are regulating minors' use of tanning devices. Currently, at least 26 states regulate tanning facilities for minors and 13 states introduced legislation in the 2007 session.⁹ Kansas is a state without any regulations on youth access to tanning.^{12,13} Since there have been only a few studies done about whether tanning operators support or oppose youth access restrictions; this study

proposed to evaluate the baseline attitudes and beliefs in regard to youth tanning and stated practices among Kansas tanning operators.

Purpose of Study

This study identified and evaluated indoor tanning operators' attitudes and stated practices regarding youth access to tanning in the State of Kansas. Likewise, this study attempted to give essential information regarding the need to enforce youth access to tanning for Kansas law makers.¹⁴

The following research questions were identified to address the attitudes and stated practices among Kansas tanning operators.

- Research question one: What is the perception and attitudes of the risks associated with youth tanning among tanning facility operators in the state of Kansas? This question was answered by assessing tanning operators perceptions of risks associated with tanning, whether they believed someone can be too young to tan, their recommended minimum age for using UV tanning, and the age they felt a person should show written parental consent.

- Research question two: What are the stated practices among tanning facility operators in the state of Kansas? This question was answered by assessing whether tanning operators had ever discouraged a young client from receiving a tan, the age at which adults are no longer required to accompany youth for tanning and the age of their youngest client who received tanning treatments.

LITERATURE REVIEW

A review of literature was conducted by using the databases Medline and CINAHL. The search was undertaken using the key words of indoor tanning, tanning beds, ultraviolet light, skin cancer, risk of tanning, minors, youth, adolescents, legislation, Kansas and tanning operator.

The Skin Cancer Foundation has estimated that more than a million people will be diagnosed with skin cancer this year. Solar UV radiation and sunburns are the major risk factors for skin cancer.⁷ A study was done in 2002 to assess exposure from tanning beds and their association with SCC and BCC skin cancers. Limited data existed at that time to link these types of skin cancers, yet a few studies had linked melanoma to tanning beds use.¹¹ However, it has been recognized that the relative risk for SCC, BCC and melanoma steadily increased with early ages at first exposure to tanning devices.⁷ This study showed the need for public education for youth about risk factors of developing skin cancer.

Because of data mentioned in these studies, current public health recommendations support safe sun behaviors, including the use of sunscreens with a Sun Protection Factor of 15 or higher, minimizing sunburns and avoiding tanning beds.^{5,10} A large survey was conducted on 10,000 children and adolescents regarding sun protection attitudes and practices. The study found the majority of teens were not following these recommendations. More specifically only 34% of teenagers used sunscreen routinely and 83% sunburned at least one time during the previous summer, thus making them more susceptible to be diagnosed with skin cancer later in life.⁵

Lazovich et al identified that knowledge, positive attitudes toward tanning, social factors and influences were all significantly associated with teens that had ever tanned and the intention to tan indoors.¹⁵ Girls have been shown to visit tanning beds more than boys.^{5,6,15,16} Usually tanning is repetitive behavior in nature despite the harmful effects.¹⁴ Warthan et al found that with outdoor sunbathers there was a potential substance-related disorder associations. This demonstrates the need for strategies to prevent and decrease UV tanning especially by youth.¹⁶

Since the late 1990's state legislations have been passing laws regarding youth access to indoor tanning in an effort to decrease the effects of UV exposure and the development of skin cancer.^{4,17,14,18} According to earlier study done by Francis et al there were about twenty-three states with regulations on youth access.¹⁷ Yet, in the most recent literature by the National Conference of State Legislatures it was found that twenty-six states have passed regulations on youth access to tanning.⁹ Hester et al found mixed success with tanning regulations specifically a high non-compliance with youth access laws in Texas and higher compliance levels in states with longstanding youth access regulations (i.e., Illinois and Wisconsin), suggesting the potential for successful tanning industry youth access regulations.¹⁸ Hester et al conducted a survey for tanning operators, which showed their opinions about attitudes and stated practices for youth access to tanning. This study was done because the current youth access practices of indoor tanning facilities had not received extensive examination, whether indoor tanning facility operators supported or opposed youth access restrictions. It was found that tanning operators felt that UV tanning posed little or no harm, yet most of them felt that a client could be too young to tan indoors and most believed that written parental

permission should be required for youth.¹⁴ This study was done in various states both with and without regulations. The states with regulations included North Carolina, Maryland, California, Washington, Michigan and Texas.

METHODOLOGY

Design and Measurement

This study was designed to take a cross-sectional view of Kansas tanning facilities, specifically to evaluate tanning operators' demographics and their attitudes and stated practices regarding youth access to indoor tanning. Kansas doesn't have regulations regarding youth tanning. A survey consisting of seventeen questions with multiple choice, dichotomous and Likert scale type questions was sent through United States mail to a convenience sample of tanning facilities licensed in the State of Kansas. The survey was based on a previous study conducted by Hester et al and the rights to the survey were obtained from the survey authors prior to initiating the study. The survey measured basic demographics, opinions about indoor tanning risks and stated practices on youth access to tanning. Prior to the initiation of this study, Wichita State University Institutional Review Board approved this study.

Subjects

A mailing label list of all tanning operators licensed in the State of Kansas was obtained from the Kansas Board of Cosmetology. Only those operators located and doing business in the State of Kansas were asked to complete the survey. Subsequently, 655 tanning facilities were mailed a survey. The subjects were given four weeks to respond and return the survey.

Attitudes and Stated Practices of Tanning Operators

Research question one required frequency statistics to measure responses in regard to attitudes of the risk of UV tanning and whether the subjects believed someone was too young to tan. Research question two required frequency statistics to determine if tanning operators had ever discouraged someone from receiving a tan.

RESULTS AND DATA ANALYSIS

The target population of the study was all licensed facilities that offer UV tanning treatments in the state of Kansas (n = 699). Forty-four tanning facilities were excluded since there was another tanning facility with the same name in the same city. Surveys were mailed to the sample population consisting of 655 Kansas tanning facilities. Four surveys were also excluded because of an incorrect address (n=651).

Surveys were collected from May 19, 2006 to June 16, 2006. A total of 182 tanning operators' responded corresponding to a 28 percent response rate. The data from the surveys was manually entered into an Excel spreadsheet, edited and then imported into SPSS version 13.0 for analysis.

Descriptive Statistics

Demographic Profile

The survey was arranged to collect demographic data such as facility type, years in the tanning industry, gender, age, highest education level and whether respondents had children in their household.

As shown in Table 1, the mean years in the tanning industry of the study population was 10.59, +/- SD 8.10. The majority of the respondents were tanning facility owners (48.9%, n = 93). Most respondents were female (82.6%) and the mean age of the

respondents was 43.57, +/- SD 11.03. Forty-six percent of the tanning operators had some college for the highest education level completed (n = 88). The majority had children in their household (59.5%, n = 113).

TABLE 1
DEMOGRAPHICS OF TANNING OPERATORS (n=182)

	Frequency	%	Mean	SD (+/-)
Years in tanning industry			10.59	8.101
Gender				
Female	157	82.6		
Male	24	12.6		
Age			43.57	11.035
Education				
Less than high school	2	1.1		
High school	28	14.7		
Some college	88	46.3		
College degree	53	27.9		
Some graduate school	3	1.6		
Graduate school degree	8	4.2		
Current position				
Spa Owner	28	14.7		
Spa Manager	2	1.1		
Spa Employee	1	0.5		
Tanning Facility Owner	93	48.9		
Tanning Facility Manager	6	3.2		
Tanning Facility Employee	3	1.6		
Other-(examples)	49	25.8		
Beauty salon owner				
Fitness Center				
Children in the household				
Yes	113	59.5		
No	68	35.8		

Percents may not equal 100% as some subjects failed to complete some questions.

Research Questions

The remaining portions of the survey were used to answer the research question beginning with questions pertaining to the attitudes of tanning operators in the State of Kansas and then to answer the question pertaining to stated practices of tanning operators in the State of Kansas.

Facility Operator's Attitudes

- Question 1: What are the perception and attitudes of the risks associated with tanning among tanning facility operators' in the state of Kansas?

Facility Operators' Stated Practices

- Question 2: What are the stated practices among tanning operators in the state of Kansas?

Quantitative Data

Attitudes

As shown in Table 2, the majority of the respondents felt that there was “none to a little risk” with indoor tanning (60%), yet 87.4 % did feel that someone can be too young to receive UV tanning treatments. The recommended minimum age for using UV tanning treatments was 15.14 (SD+/- 2.367). Also, the majority of respondents felt someone should show written parental permission (92.1%, n = 175).

TABLE 2

ATTITUDES OF TANNING FACILITY OPERATORS (n=182)

	Frequency	%	Mean	SD(+/-)
Degree of risk in receiving UV-tanning-treatments, such as sessions in tanning beds that emit ultraviolet light				
A lot	4	2.1		
Somewhat	54	28.4		
A little	89	46.8		
None	25	13.2		
Don't know	6	3.2		
Do they feel someone can be too young to tan?				
Yes	166	87.4		
No	13	6.8		
Don't know	3	1.6		
Recommended minimum age for using UV tanning treatments			15.14	2.367
Do they feel someone should show written parental permission?				
Yes	175	92.1		
No	4	2.1		
Don't know	3	1.6		

Percents may not equal 100% as some subjects failed to complete some questions.

Stated Practices

As shown in Table 3, the majority of the respondents have discouraged individuals from tanning because they felt they were too young (65.3%, n = 124). The mean age that adults were no longer required to accompany children for UV tanning treatments was 16.31. The mean age of the youngest customer was 16.89 (SD +/- 4.061). Approximately 72% of the respondents recommended horizontal tanning beds.

TABLE 3
STATED PRACTICES OF TANNING OPERATORS (n=182)

	Frequency	%	Mean	SD (+/-)
Discouraged someone from tanning for being too young				
Yes	124	65.3		
No	55	28.9		
Don't know	3	1.6		
Age at which adults are no longer required to accompany children?			16.31	1.433
Age of the youngest customer			16.89	4.061
Offer UV-tanning treatments				
Yes	182	95.8		
No	0	0		
Don't know	0	0		
Missing-no answer	8	4.2		
UV-tanning treatment recommended most frequently				
Horizontal tanning bed	136	71.6		
Vertical tanning booth	31	16.3		
Other	2	1.1		
Both Horizontal and vertical tanning	12	6.3		
Must children under a certain age be accompanied by an adult when they receive UV-tanning treatments at your establishment?				
Yes	109	57.4		
No	67	35.3		
Don't know	4	2.1		
Age that parental permission be obtained			16.55	1.564

Percents may not equal 100% as some subjects failed to complete some questions.

Comparison of Attitudes and Stated Practices on Key Factors

A comparison was made between the attitudes of operators who felt someone could be too young to tan with the stated practice if the operator had ever discouraged someone from tanning. Approximately 87% of respondents felt someone could be too young as compared to only 65.3% that had ever discouraged someone from tanning because of their age.

The tanning operators recommended age for UV tanning was compared with the age of the youngest customer. Fifteen was the age that operators recommended for tanning compared to 16.89 reported as the youngest customer.

The attitude of whether or not someone should have to show written parental permission to use UV tanning was compared to the stated practice of accompaniment by an adult when a youth received UV tanning. Tanning operators' attitudes were overwhelmingly supportive for youth having written parental consent (92.1%) compared to only 57.4% of operators practicing that youth should be accompanied by an adult.

Figure 1 summarizes the data of comparing attitudes with stated practices.

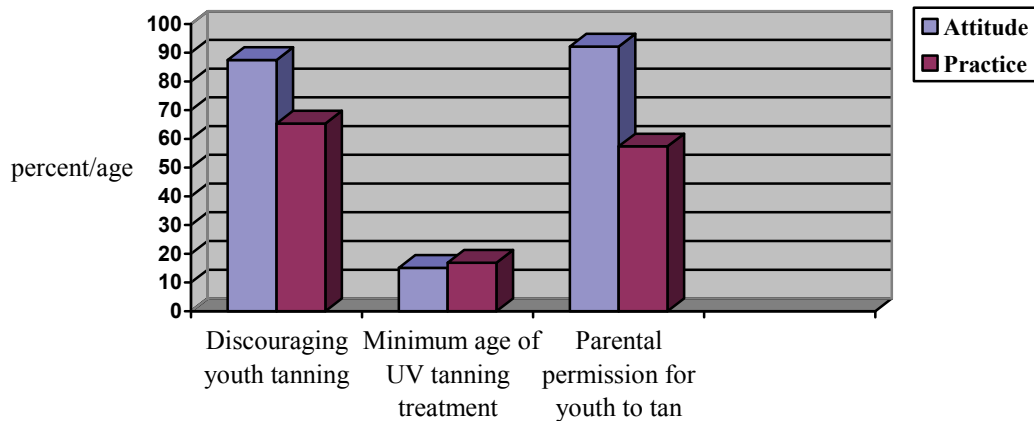


Figure 1. Comparison of attitudes and stated practices on key factors

Analysis of Attitudes and Stated practices

As shown in Table 4, the majority of the respondents felt that there was “none to a little risk” with indoor tanning (60%). Most did feel that someone can be too young to tan and 65% had ever discouraged one from tanning because of their age. Therefore, there was a significant relationship between the stated practice of discouraging someone from tanning due to age and the attitude that one can be too young to tan.

TABLE 4

ANALYSIS OF ATTITUDES AND STATED PRACTICES

Discouraged someone from tanning for being too young				
	Yes	No	Total	X ²
Do they feel someone can be too young to tan?				
Yes	115	42	157	18.735*
No	<u>2</u>	<u>11</u>	<u>13</u>	
	117	53	170	
Must children under certain age be accompanied by an adult when receiving tanning treatments				
	Yes	No	Total	X ²
Do they feel someone should show written parental permission?				
Yes	98	64	162	2.361
No	<u>2</u>	<u>2</u>	<u>4</u>	
	100	66	166	
Pearson Correlation			Mean	SD(+/-)
Recommended minimum age for using UV tanning & Age of youngest customer. Correlation =.267†			15.14	2.367
			16.89	4.061

*df=1, P<.0001, †P<.0001

DISCUSSION

The National Cancer Institute and numerous leading national health care organizations estimate more than one million Americans are diagnosed with skin cancer each year. Melanoma is more common than any non-skin cancer among women between the ages of 25 and 29.¹⁹ Also, approximately 20 people die each day from skin cancer, primarily melanoma.⁸ These statistics are remarkable and the numbers will continue to increase if the public, including health care providers, parents, youth, and policymakers, don't increase their awareness of the association between indoor tanning and skin cancer.

In summary, this study showed the majority of the respondents felt that there was “none to a little risk” with indoor tanning, yet the it has been proven has that both types of ultraviolet light cause skin cancer, damage to the eyes and the immune system,

and wrinkling and other signs of premature skin aging.³ It was also found in this study the majority of tanning operators believed that written parental consent and age regulations for indoor tanning should be required. This demonstrates probable support from the tanning operators in the state of Kansas with the introduction of youth access laws.

This data must be interpreted with the caveat that it was based on a small sample and includes only one state without youth tanning regulations. Therefore; this is a preliminary study, and bearing in mind the possible biases inherent in the study design. In considering the overall design and analysis of this study, efforts were made to identify possible threats to validity. In particular the small population size, which was a convenience sample (as opposed to a random sample), may have increased the risk of error. However, this study was descriptive and exploratory in nature and not intended for any other use.

Summary of Results as Compared to the Literature

This study was compared to the similar survey conducted by Hester et al on tanning operators in states with and without tanning regulations. The results were similar. It was found that 84% of tanning operators felt that UV tanning posed little or no harm in the Hester et al study, as compared to 60% found in this study.

It was also found in the Hester et al survey that over 90% of indoor tanning operators felt that a client could be too young to tan, suggesting a minimum age of 13 and this study found 87% had the same attitude with the minimum age of 15. Also this study found that tanning operators' attitudes were overwhelming supportive for youth having written parental consent (92.1%) in comparison to 80% in Hester's study.

In both studies it was shown that a significant number of tanning operators felt the degree of risk with indoor tanning was little to none, yet the majority of them believed that written parental consent and age regulations for indoor tanning should be required. Collectively these results confirm the probable support from the Kansas indoor tanning industry for youth regulations on indoor tanning.

Overall Significance of the Study Findings and Opportunities for Further Research

The importance of this study is reflected by that fact that this is the first known study conducted in the state of Kansas on the attitudes and stated practices of tanning facility operators. Kansas remains a state without any legislation on minors and tanning. This study was done because the current youth access practices of indoor tanning facilities have not received extensive examination in Kansas. Results indicate that Kansas tanning facility operators similarly compare to other states with and without regulations. It was demonstrated that the tanning operators believe youth should show written parental consent, but when asked if they were carrying out this activity the percentages drastically changed. This finding would make one believe that legislation enforcing age restrictions would be successful. Further study would then be needed to ensure the effectiveness at tanning facilities if such legislation would be approved.

CONCLUSION

The youth population needs to be aware of the associated risks and increased correlation of skin cancers with indoor UV tanning. This study intended to show the opinions of tanning facility operators' attitudes and stated practices regarding youth access to tanning in Kansas. By surveying a selected group of tanning facility operators in Kansas; this study provided insight into their perceptions regarding youth access to

tanning. In the end, this study may be helpful to legislators in regards to knowledge about tanning operators' support or opposition of tanning regulations.

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APPENDIX

APPENDIX

A Study of Tanning Operators
in the State of Kansas:
Their Attitudes and Stated Practices
Regarding Minors and Tanning

Survey

Graduate Student: Monica Apollo RN, PA-S
Wichita State University

Faculty Advisor: Richard Muma, PhD, MPH, PA-C
Wichita State University

Adapted with permission from: **Hester E, Johnson K, Crane L, Schilling L, Dellavalle R. Indoor UV Tanning Operator Opinion Regarding Youth Access: An Electronic Survey. *J Am Acad Dermatol.* 2004;51: 814-816.**

Dear Kansas Tanning Operator:

The following survey was developed for my Wichita State University Physician Assistant (PA) Master Research Project to evaluate indoor tanning operators' attitudes and stated practices regarding youth access to tanning in the State of Kansas. My PA faculty advisor is Dr. Richard Muma, Program Director. To reach Dr. Muma or myself, use the email listed on page two of this survey or call 316/978-3011. Since you have been identified as a tanning operator, this survey will ask about your general characteristics, attitudes and stated practices regarding youth access to UV- tanning at your establishment. Results of this survey will likely assist those interested in learning more about youth access to tanning. Please indicate your responses using this survey. No identifying marks will be included on the survey. This process will likely eliminate harm to you, protect your privacy and prevent discrimination of any kind. You will not incur any personal expense, other than time, in connection with this research project. All data will be kept in my possession in a locked file cabinet. This survey has been approved by the Wichita State University Institutional Review Board.

Approximate time to complete the survey is 5 minutes.

Thank you for your time and participation. Monica Apollo, PA-S, Wichita State University

Section I: General Information

1. Please choose the one category that best describes your current position.
 Spa Owner
 Spa Manager
 Spa Employee
 Tanning Facility Owner
 Tanning Facility Manager
 Tanning Facility Employee
 Other-please specify _____

2. How many years have you worked in the spa or tanning industry?

3. What is your gender?
 Female
 Male

4. What is your age?

5. What is the highest level of education you have completed?
 Less than high school
 High school
 Some college
 College degree
 Some graduate school
 Graduate school degree

6. Do you have any children in your household?
 Yes
 No

Section II: Attitudes and Stated Practices

7. Does your facility offer UV-tanning treatments?
 Yes
 No
 Don't know

8. For customers in good health, to what degree do you feel there is any risk in receiving UV-tanning-treatments, such as sessions in tanning booths or tanning beds that emit ultraviolet light?
- A lot
 Somewhat
 A little
 None
 Don't know
9. What UV-tanning treatment do you recommend most frequently?
- Horizontal tanning bed
 Vertical tanning booth
 Other (please specify) _____
10. Do you feel that someone can be too young for UV-tanning treatments?
- Yes
 No
 Don't know
11. Have you ever discouraged someone from receiving a UV-tanning treatment because you thought they might be too young?
- Yes -----If yes how young was that person _____
 No
 Don't know
12. What is the average age of your youngest customer who receives UV-tanning treatments?
- _____
13. What would be the minimum age that you would recommend for using UV-tanning?
- _____
14. Do you think children under a certain age should have to show written parental permission for UV-tanning?
- Yes
 No
 Don't know
15. Up to what age should parental permission be obtained for a UV-tanning treatment?
- _____
16. Must children under a certain age be accompanied by an adult when they receive UV-tanning treatments at your establishment?
- Yes
 No
 Don't know
17. At what age are adults no longer required to accompany their children for UV-tanning?
- _____

Thank you for completing this survey!
Please return in the postage paid envelope.

If you have any questions regarding this survey, you can contact:
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