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APPROACHING MENTAL HEALTH: SOCIAL ECOLOGICAL MODEL AND THEORY OF PLANNED BEHAVIOR/THEORY OF REASONED ACTION[1]

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ABSTRACT

Muslims underutilize *Formal Mental Health Services (FMHS)* to enhance their quality of life or address their biopsychosocial spiritual and economic issues. Muslims are understudied and underserved. There is a need for theoretically well-grounded research. Therefore, we partially tested a contextual theoretical framework entitled *understanding Muslims' approach toward mental health issues and services based on Theory of Planned Behavior and Theory of Reasoned Action (TPB/TRA) in the context of Social Ecological Model (SEM)*. We had 209 (120 male) Muslims from Southeastern USA as the participants. We used descriptive statistical and path analyses. We answered seven research questions about how the Muslims approach mental health issues and FMHS in terms of four background variables (e.g., sex, education, race, and past use of FMHS) and the following five constructs. In terms of path analyses results, cultural beliefs about mental health issues and their causes and treatments (1st construct) and knowledge (2nd construct) toward FMHS and the background variables *all together* explained 36% of the attitudes (3rd), 13% of the stigma (4th), and 28% of the Perceived Behavioral Control (PBC: self-efficacy, 5th) toward FMHS. The paths among the five constructs were significant except for the path from knowledge to stigma. The Muslims had slightly higher than the moderate level on cultural beliefs, knowledge, and PBC; a moderately favorable level on attitudes; and slightly under the moderate level for PBC. The Muslims did not strongly favor or disfavor the constructs. The Muslims strongly aligned with a medical/scientific explanation of mental health issues and their causes and treatments. For the use of FMHS in the past: 63.63% (133 Muslims) reported they have never while %36.36 (76 Muslims) reported use of FMHS. We provided implications for researchers, mental health providers, educators, and social advocates who can be part of advancing quality of life and/or addressing related issues.

Keywords: Muslims' approach to mental health, cultural beliefs, attitudes, social stigma, social ecological model, theory of planned behavior, theory of reasoned action.

[1]**We prepared this manuscript based on the first author's PhD dissertation* entitled "Mental Health Issues and Seeking of Formal Mental Health Services Among Muslims in the Southeastern U.S.: Preliminary Investigation of a Contextual Theoretical Framework Based on the Theory of Planned Behavior/Theory of Reasoned Action and the Social Ecological Model. (2017)" Directed by the second author J. Scott Young, PhD who chaired the dissertation.

The first author had full scholarship for his PhD process including the dissertation through the University of North Carolina at Greensboro (UNC Greensboro, state university) from the US government and through Adiyaman University (ADYU, state university) from the central government in Turkey.

INTRODUCTION

Minority groups in the Western countries including the US face many mental health issues and underutilize formal mental health services (Herrick & Brown, 1996; Li & Browne, 2000; Tanhan & Francisco, 2019; Tanhan & Strack, 2020). Spiritual or religious groups keep getting attention at different aspects of life including mental health (Al-Shannaq et al., 2021; Carey et al., 2021; Cashwell et al., 2013; Drummond & Carey, 2020; Tanhan & Young, 2021). Muslims in the US being one of the spiritual or religious minority groups also experience biopsychosocial spiritual and economic issues (Genc & Baptist, 2020; Tanhan & Strack, 2020). They underutilize Formal Mental Health Services (FMHS) to enhance their overall wellbeing or address the issues. Researchers have highly stressed the lack of well-grounded empirical research on the Muslims' mental health (Altalib et al., 2019; Badri, 2020; Iqbal & Skinner, 2021; Tanhan & Young, 2021).

There is even less empirical research on the US Muslims living in the Southeast compared to the ones living in the North and West coast (Tanhan & Francisco, 2019; Tanhan & Strack, 2020). And though there are only a few studies on the Muslims in the Southeast, the researchers stressed that the Muslims in the area experience more discrimination and mental health issues. The researchers stressed that discrimination against minority groups or more specifically non-white people has been a historical issue in the history of the US.

For example, Tanhan and Francisco (2019) worked with 116 Muslims affiliated with a state college in the southeast of the US. The authors collaborated with the Muslim community from a Community-Based Participatory Research (CBPR) and Social Ecological Model (SEM) perspective to conduct a well-grounded research. Based on all these, the CBPR team formed a survey of the most important strengths and concerns. The team constructed many items because they had many biopsychosocial spiritual and economic issues. However, the researchers collaborated with the team and combined similar or repeated items. Finally, the team ended up with the form that included 33 items (e.g., being able to practice one's faith, feeling safe, being safe, having professors respecting their religion and culture, having access to halal food). The form also included two open-ended questions. In the first open-ended question the participants expressed any other concerns beyond the 33 items. In the second open-ended question, the participants provided any other support that they wished to receive.

For the 33 items in the form, the participants rated how much each item was important at one column and how much they were satisfied with the item at the other column. The participants were recommended to focus on their life on campus as a Muslim so that as the team they could reach out to key people and administrators to advance overall life conditions at community level. Overall, the community was not satisfied with their life on campus as Muslims because they experienced many issues based on the 33 items and open-ended questions. The most obvious issue was the Muslims not having prayer places/rugs, ablution stations, and water in restrooms. The importance rating for this item was 94.52% and the satisfaction rating was 20.50%. The second most critical item was "I (as a Muslim of [my college]) *am* safe." The Muslims reported its importance as 94% and satisfaction with it as 40%. A third related item was "I (as a Muslim of [my college]) *feel* safe." The importance of

the item was 93% and satisfaction was 39%. The community did not feel safe and was not safe based on their report.

Though the Muslims reported many biopsychosocial spiritual and economic issues, they also ranked four items directly regarding mental health services and providers not to be very important. The community was not familiar with the services and providers. Furthermore, the Muslims were not satisfied with the services. For example, the importance rate for "counseling could be helpful for yourself or your community to address issues" item was 65% and satisfaction was at 43%. The second item was "Counselor(s) or psychologist(s) work with individuals or your community to address difficulties and increase quality of life." The participants ranked the item as important at a level of 65% and being satisfied with the related services at 40%. The third item was "You have access to counseling services." The participants ranked its importance as 67% and satisfaction as 45%. The final mental health related item was "You feel safe using counseling services that are available." The community ranked the item's importance as 70% and satisfaction with it as 46%. The researchers also held a community dinner meeting where they shared the results with all people or institutions interested in the study and topic.

Results from the 33-items survey, two open-ended questions, and the community dinner meeting indicated that the Muslims in the southeast of the US face many issues that need to be addressed professionally. The Muslims also reported their satisfaction with the researchers for conducting the study and sharing the results with them. The Muslims also explicitly stated that they would love to collaborate with more mental health providers and utilize the services when they learned that the first researchers being a mental health provider coming from a counseling background and the second researcher being a public health provider coming from a psychology background.

In another study with 118 Muslim college students in the southeast of the US, Tanhan and Strack (2020) used an innovative, therapeutic, collaborative, participants empowering, and comprehensive qualitative method called Online Photovoice (OPV). The researchers used OPV to understand the Muslims' most important strengths and concerns. Nine main concern themes emerged including lack of available prayer facilities (e.g., prayer rugs, place; reported by %48); inadequate support from Muslim and non-Muslim communities (30%); lack of access to healthy and halal food on campus (13%); insufficient level of knowledge about Islam among Muslims and non-Muslims (13%) to mention a few mostly reported ones. Though this study was qualitative and the participants were not provided with any previously constructed items, the results were very similar to Tanhan and Francisco's 2019 study.

Some other researchers also found similar results including microaggressions toward Muslims on campuses (Manejwala & Abu-Ras, 2019), racism (Phillips & Lauterbach, 2017), lack of knowledge about Muslims and Islam (Tanhan, 2019), lack of research to increase overall quality of life (Tanhan & Young, 2021), Muslims experiencing psychosocial issues (Lowe et al., 2018). All these indicate that contextually more grounded research and services are needed to enhance overall wellbeing and address related issues.

Contextually Grounded Mental Health Research and Service Need

The Muslims underutilize mental health services because there is a lack of well-grounded contextually and empirically relevant mental health research and services (Tanhan, 2019). Therefore, they are underserved (Abu-Raiya, 2012; Ahmed & Reddy, 2007; Bhattacharyya et al., 2014; Tanhan & Francisco, 2019). Previous researchers called for more effective theoretically constructed research and services (Agilkaya-Şahin, 2019; Skinner, 2010; Tanhan & Young, 2021). In order to close the gap, Tanhan and Young (2021) reviewed more than 300 peer-reviewed manuscripts on Muslims' mental health. They proposed a well-grounded concept map (see Figure 1) showing the most important concepts explaining Muslims' approach to mental health services and issues.

Tanhan and Young (2021) provided an empirically testable contextually and theoretically well-grounded theoretical framework entitled *understanding Muslims' approach toward mental health issues and services based on Theory of Planned Behavior and Theory of Reasoned Action (TPB/TRA) in the context of Social Ecological Model (SEM)* (See Figure 2). The authors constructed the framework based on the Muslim mental health literature (the concept map), TPB/TRA, and SEM. Therefore, it is one of the most well-grounded and comprehensive frameworks that we are aware.

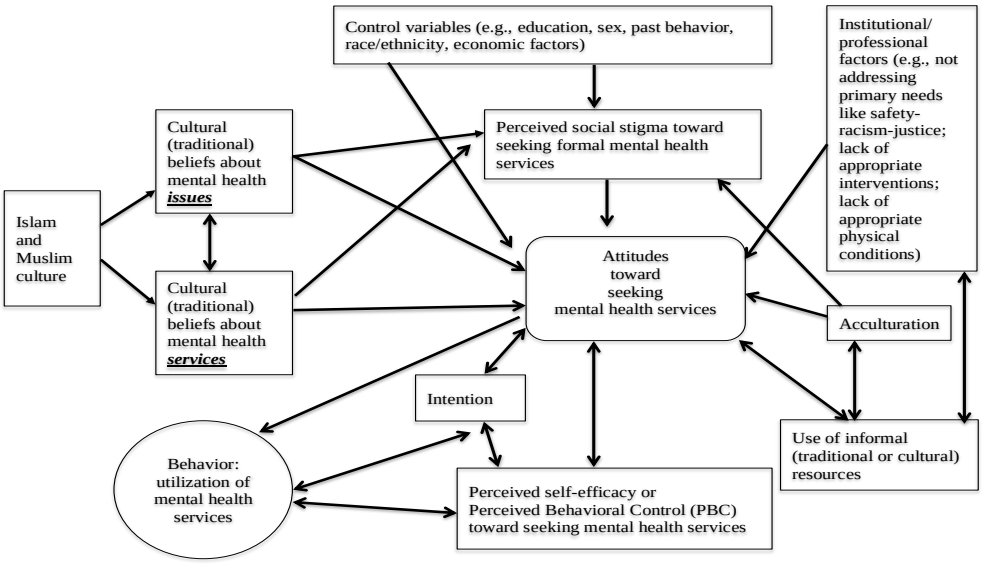

Figure 1 . The Concept Map: Factors Impacting Muslims Mental Health Service Consumption

Note. We borrowed the figure from Tanhan (2017) and Tanhan and Young (2021) with permission.

The framework consists of seven constructs: Cultural Beliefs about Mental Health issues/Problems and their causes and treatments (CBMHP-cultural beliefs, 1st), Knowledge about Formal Mental Health Services (KFMHS-

knowledge, 2nd), Attitudes Toward seeking Formal Mental Health Services (ATFMHS-attitudes, 3rd), Perceived social Stigma Toward Seeking Formal Mental Health Services (PSTSFMHS-stigma, 4th), Perceived Behavioral Control toward seeking formal mental health services (PBC, 5th), intention toward seeking formal mental health services intention (6th), behavior meaning actual use of formal mental health services (7th), and the four control (background) variables. Based on the framework, mental health professionals as researchers can focus on understanding these main constructs and their relationship with one another. The professionals as mental health providers can consider the constructs in the process of providing services. However, none of the researchers including Tanhan and Young (2021) tested the framework. Tanhan (2017) and Tanhan and Young strongly called future researchers for partial or full testing of the framework (2020).

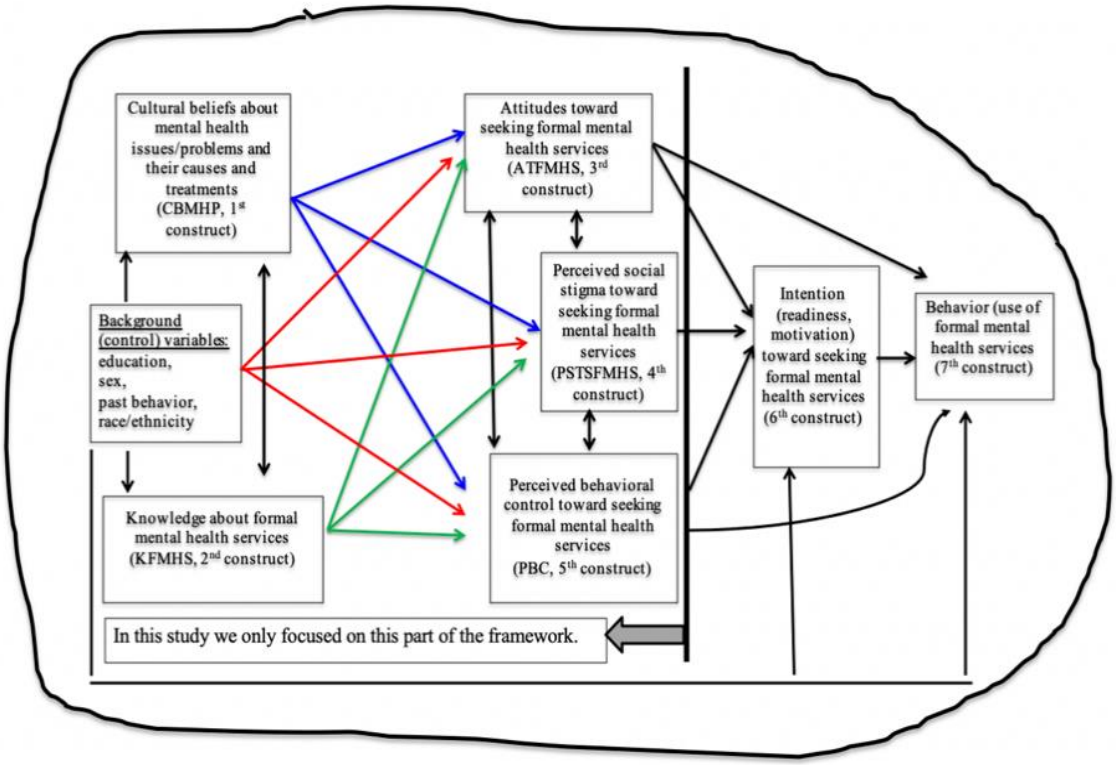

Figure 2. A Contextual Theoretical Framework (Model) to Understand Muslims' Approach Toward Mental Health Issues and Services based on Theory of Planned Behavior and Theory of Reasoned Action (TPB/TRA) in the context of Social Ecological Model (SEM)

Note. This theoretical framework for the current study is drawn based on utilizing Theory of Planned Behavior/Theory of Reasoned Action (TPB/TRA), Bronfenbrenner's Social Ecological Model (SEM), and related literature from TPB/TRA, SEM, and Muslim mental health. The curved/flexible line encircling all the framework is to remind/represent a contextual perspective at individual, community, and global levels for more contextual and functional/effective mental health research and services. For more detailed information on the framework, see the main resources of the framework (Tanhan, 2017; Tanhan & Young, 2021).

Purpose of the Research and the Theoretical Framework for the Study

Only a few previous researchers explicitly named and provided their theoretical framework for their empirical research, and they also highlighted the need for having a set theoretical framework (e.g., Manejwala & Abu-Ras, 2019; Rothman & Coyle, 2018; Sultan et al., 2019; Tanhan, 2017, 2019; Tanhan & Francisco, 2019; Tanhan & Strack, 2020; Tanhan & Young, 2021). Based on all these, our main goal was to partially test the contextual theoretical framework entitled *understanding Muslims' approach toward mental health issues and services based on Theory of Planned Behavior and Theory of Reasoned Action (TPB/TRA) in the context of Social Ecological Model (SEM)*. SEM provides a contextual perspective (Bronfenbrenner, 1977; Bronfenbrenner & Evans, 2000; Tanhan, 2019, 2020) in which one can test more empirical theories like TPB/TRA (Tanhan & Young, 2021). We focused on the first five constructs and four background variables (education, sex, past behavior, race/ethnicity) based on previous researchers' suggestions and findings.

Significance of the Study

Through this study, we have improved the understanding of how Muslims living in the Southeastern U.S. approach mental health issues and services based on testing the proposed contextual theoretical framework. This study was essential due to the current lack of research on how Muslims in the Southeastern U.S. approach mental health issues and services. This is important because the Muslim community in the Southeastern U.S., like the larger Muslim community and especially minority groups in the country, face many biopsychosocial spiritual and economic issues. Utilizing the framework and testing part of the framework, we have addressed important gaps in the literature, which have been voiced by numerous researchers. This may aid mental health providers as researchers and/or practitioners design and provide more effective research and services. Understanding what affects Muslims' approach to mental health issues and services will also help key people in the Muslim community, such as spiritual/religious leaders and other health providers like general physicians have a more comprehensive picture of this vulnerable and underserved community.

Therefore, understanding how Muslims approach to mental health issues and services by focusing on clear constructs is more likely to facilitate mental health professionals, administrators, community leaders, and organizations to accompany the Muslims to enhance their overall life quality and/or address their related issues at individual, micro, meso, exo, and macro levels. In today's global and especially considering the recent historical COVID-19 pandemic, issues of one community are more likely to affect the rest of the world gradually and systematically (Çiçek et al., 2020, 2021a, 2021b; Tanhan et al., 2020). Enhancing the Muslims' overall life quality or addressing their related issues is more likely to affect all others in touch with them.

Finally, the use of TPB/TRA and SEM also has been missing in larger mental health literature, and previous researchers called for the use of them in mental health (Romano & Netland, 2008; Tanhan & Young, 2021). Therefore, this study is significant because, we tested a well-grounded theoretical framework based on well-

grounded theories (e.g., TPB/TRA, SEM). And this closes an important gap in overall mental health and especially Muslim mental health literature.

Research Questions

Through seven research questions, we explored the descriptive statistics of the first five constructs of the framework and the relationships among the constructs.

Research Question 1: What are the descriptive statistics (e.g., mean, standard deviation) for the participants' scores in terms of the five constructs including CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC?

Research Question 2: Do participants' CBMHP-cultural beliefs scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and KFMHS-knowledge?

Research Question 3: Do participants' CBMHP-cultural beliefs scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and KFMHS-knowledge?

Research Question 4: Do participants' CBMHP-cultural beliefs scores explain participants' PBC scores when controlling for background (control) variables and KFMHS-knowledge?

Research Question 5: Do participants' KFMHS-knowledge scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and CBMHP-cultural beliefs?

Research Question 6: Do participants' KFMHS-knowledge scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and CBMHP-cultural beliefs?

Research Question 7: Do participants' KFMHS-knowledge scores explain participants' PBC scores when controlling for background (control) variables and CBMHP-cultural beliefs?

METHOD

In this section, we provided a detailed description of the methodology for the current study and described the research questions, participants, instruments, procedures, and data analysis.

Research Model

Our research method was quantitative. And our research design was descriptive and correlational based on cross-sectional data. In this study we used Structural Equation Modeling (SEM) to explore the dynamics/paths among the five constructs. We used SEM as a powerful, multivariate, and quantitative technique to test and evaluate multivariate relationships. SEM differs from other modeling approaches as it tests the direct and indirect effects on relationships. SEM allows researchers to see all relationships and statistical analyses together. We used LISREL for the path analyses for analyzing the data because there are two independent (exogenous) variables, four control variables which are also independent, and three dependent (endogenous) variables. We have provided detailed information in the analysis section.

Participants: Universe, Sampling, and Study Group

The universe of the participants for this study was any Muslims at the age of 18 or older who identified as Muslims and had lived in the Southeastern U.S. for at least for two months. We used convenience and snowball sampling methods to recruit our participants. We also strived for a systematic attempt to increase diversity (e.g., race, education, different settings). Our final study group meaning the actual participants in this study included 209 adults aged 18 or older who identified themselves as Muslims and had lived in the Southeastern U.S. for at least two months. We did the statistical analyses for the 209 participants. The researchers contacted the Muslim organizations to distribute the survey for the study. The researchers asked the organizations' administrators to distribute the online link as well as printed versions. The administrators sent the link through various channels (e.g., email, social media, phone text/message) to about 2,000 Muslims in their contact lists. Some of these participants could have been in multiple lists (e.g., being in the email lists of MSA and RAM).

The organizations also distributed about 250 printed versions at different gatherings, especially at one Friday prayer and 102 participants returned the printed versions. They were filled out, and the researchers entered them in the computer. For the online survey, 220 participants submitted the survey online; of those 107 were complete while 113 were not usable at all; therefore, we removed the responses. This resulted in a total sample for the current study of 209. All the analyses for the research questions were conducted with 209 participants. The participants had 15 days to participate and complete the study.

Participants' Background Variables: Sex, Education, Past Behavior, Race/Ethnicity

Sex

We had 209 (120 male, %57.42; 89 female, %42.58) adult Muslims who had lived in Southeastern US at least for two months. Compared to other studies in the Muslim mental health literature, the ratio in this study is more balanced because it is much more common to see many more men than women because Muslim men are more involved in Islamic centers, especially at mosques. There are some obligatory prayers, like Friday prayer, that Muslim men must attend, yet those prayers are optional for Muslim women.

Education

In terms of background (control) variables, the participants reported their education level as follows: less than high school (*n* = 2; 0.96%), high school (*n* = 38; %1.82), college (*n* = 100; %47.85), and graduate (*n* = 69; %33.02). These education level statistics are comparable to existing Muslim mental health literature.

Past Behavior: Use of FMHS

In terms of past behavior for utilizing formal mental health services, 63.63% (n = 133) participants reported they have never utilized mental health services, while %36.36 (n = 76) participants reported that they utilized mental health services. Of the participants who indicated that they utilized mental health services, 23.45% (n = 49) of

the Muslims reported that they "have worked/collaborated with a mental health provider (for example a counselor) in individual, group, family, and/or couple sessions to address psychological or social issues"; 22.45% (n = 47) reported that they "worked/collaborated with a mental health provider (for example a counselor) individually or with a group to organize a project, research, social advocacy action, or some similar other social events;" and 21.53% (n = 45) reported that they "have received some educational and/or psychoeducational training at individual, group, and/or community level from mental health provider(s)." The sum of the participants exceeds 209 because the participants were able to choose more than one option.

Race/Ethnicity

For race/ethnicity, the participants were grouped into five categories: Black (e.g., Sudani, Ethiopian; *n* = 59, 28.2%), Arab (*n* = 61, 29.2%), Asian (e.g., Turkish, Persian, Pakistani/Indian, Kurdish; *n* = 43, 20.6%), American (e.g., African American, White American; *n* = 28, 13.4%), and other (*n* = 18, 8.6%).

We followed a systematic attempt to gain a diverse sample in terms of education, sex, past behavior regarding use of formal mental health services, and race/ethnicity. We had convenience and snowballing sampling; therefore, we recruited participants from various and yet familiar organizations, email lists, and social media to reach out to different subgroups of the population. Some of the main organizations were Muslim Student Associations (MSA), Research Association of Muslims (RAM), two large Islamic organizations in the area, and the Office of Intercultural Engagement (OIE) at a state university in the area. Individuals were asked to participate through the consent form and letter to participate if they identify themselves as Muslim and/or accepted Islam and have lived in the Southeastern U.S., at least for two months.

Calculating Sample Size

We considered general guidelines for the use of Structural Equation Modeling (SEM) to determine sample size. According to Kline (2016), sample size should be determined based on the complexity of the model that is empirically examined. However, he explained that many studies from different disciplines that show a median size of 200 is suggested while 200 participants might be too small for a complex model. More complex models, with more parameters, require larger sample sizes, thus, a ratio of observations (meaning cases or participants) per parameter (statistical estimates) is recommended in order to come with a reasonable sample size for the study. The most ideal ratio is having 20:1 meaning 20 participants per estimate (parameter); however, 10:1 is considered acceptable (Kline, 2016). In SEM, parameters mean characteristics (e.g., the variances, regression coefficients, covariance among variables, and errors) of the model of interest to researchers (Stoelting, 2002).

In this current study the whole proposed model (theoretical framework) is complex. However, we examined only part of the model, meaning the relationships among first five variables/constructs and four background (control) variables. Therefore, our studied part (model) is less complex compared to the whole model (theoretical

framework). Therefore, given that the examined part is not too complex, we utilized the ratio of 10:1 per parameter to calculate sample size in the current study.

In our study, we had nine variables: two main exogenous (independent) variables consist of CBMHP-cultural beliefs and KFMHS-knowledge; three endogenous (dependent) variables consist of ATFMHS-attitudes, PSTSFMHS-stigma, and PBC; four background (control) variables consist of education, sex, past behavior, and race (ethnicity). Based on the examined part of the model, there are 39 parameters that are calculated: 32 path coefficients, four covariance, and three errors. The 32 path coefficients consist of 20 from background (control) variables to the other five exogenous and endogenous variables (e.g., four path coefficients from education to each of the five variables; four path coefficients from sex to the first five variables) and 12 path coefficients from the two exogenous variables (CBMHP-cultural beliefs and KFMHS-knowledge) to the endogenous variables (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC). The four covariance are between CBMHP-cultural beliefs and KFMHS-knowledge; ATFMHS-attitudes and PSTSFMHS-stigma; ATFMHS-attitudes and PBC; and PSTSFMHS-stigma and PBC. The three error parameters are for each of the endogenous variables (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC).

Based on all these, we aimed for a minimum of 390 participants; however, we did not achieve this number and considered that the examined part of the model is not very complex, less than 10:1 ratio is also accepted based on experts' view (Kline, 2016). Kline explained that below 10:1 is acceptable especially considering that if the number of participants pass 200 (Kline, 2016) though that the more ratio falls below 10:1 it is more likely to see "trustworthiness falls and greater technical problems in analysis" (Kline, 2016, p.17). He also stated most of the studies using SEM do not meet the 20:1 or 10:1 ratio.

From a simple regression analysis perspective and based on preliminary/priori G*Power 3.1 (Faul et al., 2009) analysis with given alpha, effect size, and power, a minimum of 118 participants would have been necessary taking F as test of family, linear multiple regression: fixed model, R^2 deviation from zero as statistical test, power of 0.8, alpha level at 0.05, moderate effect size as Cohen's $f^2 = 0.15$, and number of predictors as 10 that are two independent (CBMHP-cultural beliefs and KFMHS-knowledge) and the four background (demographic) variables with their subcategories.

We aimed to pass the minimum required number of participants in case there is a need to eliminate participants for any reason, such as incomplete responses. We considered a moderate effect size to be consistent with earlier research in the area (e.g., Aloud & Rathur, 2009).

Instruments

In the next sections we provided detailed information (e.g., reliability, validity) for each instrument we used. We used previously developed and used instruments. We consulted with the developer and experts to improve their validity and reliability.

Cultural Beliefs about Mental Health Issues/Problems, Their Causes and Treatments (CBMHP-Cultural Beliefs) Scale

We assessed the influence of cultural and religious beliefs about the causes and treatments of mental health issues through the Aloud's (2004) *Cultural Beliefs about Mental Health Problems* (CBMHP) scale. The original CBMHP scale consists of 11 Likert-type items rated as 1 = *False*, 2 = *Probably False*, 3 = *Probably True*, and 4 = *True*. Examples of items include "Mental health or psychological problems can be caused by 'Aieen' (evil eye); Mental health or psychological problems can be treated using 'Ruqia' (Quranic Recitation)" (p. 120). Aloud developed the scale to measure Arab Muslims' cultural beliefs about mental health issues/problems and their causes and treatments. A reliability analysis of all items on the scale provided a Cronbach's alpha of .73 (Aloud, 2004) which is in the acceptable range. For the current study we had Cronbach's alpha of .65, which is moderate and acceptable. The scale is valid and appropriate to use because there are few standardized scales developed to measure Muslims' CBMHP-cultural beliefs as they relate to mental health issues.

For the current research, we edited the scale slightly due to the fact that Aloud (2004) created the scale to examine Arab-Muslims' CBMHP-cultural beliefs. Most researchers who benefited from Aloud's scale or similar measures (e.g., Ansary & Salloum, 2012; Bagasra, 2010; Bagasra & Mackinem, 2014) provided five intervals with options from *strongly disagree (0)* to *strongly agree (4)*. Other researchers have discussed the importance of utilizing at least five intervals and intervals such as strongly agree, agree, neutral/undecided/neither agree or disagree, disagree, and strongly agree (Fishbein & Ajzen, 2010; Mackenzie et al., 2004). Therefore, we edited Aloud's CBMHP scale to use a five-point Likert-type scale (disagree, somewhat disagree, undecided, somewhat agree, and agree). That means, for the scale, the lowest achievable score is zero while the highest achievable score is 44.

Some researchers who have discussed CBMHP-cultural beliefs have used Aloud's scale to inform new scales and many other researchers have cited Aloud's work. Interestingly, none of the researchers in the literature directly used Aloud's scale to conduct empirical studies. For example, Al-krenawi and others (2009) developed a scale with 11 items to measure cultural beliefs of Arabs cross-culturally among four countries, yet Cronbach's alpha was only .60. Bagasra (2010) developed a scale with 12 Likert-type items to examine cultural beliefs about mental health issues but did not include any items about cultural treatments for mental issues. Her scale had an overall Cronbach's alpha of 0.78. It is likely that many researchers have drawn from but not directly used Aloud's scale because of the measure's four intervals and the type of labels, as explained above. Therefore, we utilized the scale with minor changes to increase the psychometric features of the scale. In this way, using Aloud's (2004) modified scale was the most appropriate for our study. Some of the other minor edits were as follows. For the current study we added the term *issues* next to the word *problems* as a synonym since some authors from the Muslim mental health literature stressed that Muslims avoid the term *problem*. Furthermore, the use of the term *issue* is culturally more appropriate and are much more common in Islam.

Another important point to consider is how to score items to achieve more consistent scores for participants' CBMHP-cultural beliefs' scores. Aloud (2004) and Aloud and Rathur (2009) reported that two items "Mental health or psychological problems can be caused by biological factors (e.g., genetic illness inherited from parents or grandparents)" and "Mental health or psychological problems can be caused by environmental factors (e.g., social stress, war experience, etc." (p. 120) are reverse-scored to test the consistency of participants' responses. In the current study, the item "Mental health or psychological problems can be treated using professional mental health or psychological counseling services" (Aloud, 2004, p. 120), also was reverse coded so that participants with high score on this scale mean holding stronger/solely CBMHP-cultural beliefs. That means items one, two, and six in the final modified version of the scale were reverse scored for the analyses. Active language was used for all the items so that the items are shorter and more easily understood. We shared all these modifications with the author (Aloud, 2004) of the scale, and he approved all the editing.

Knowledge about Formal Mental Health Services (KFMHS-Knowledge) Scale

We measured the participants' knowledge about mental issues and services through Aloud's (2004) Knowledge and Familiarity with Formal Mental Health Services Instrument. We slightly edited the scale and called it *Knowledge About Formal Mental Health Services (KFMHS-Knowledge) scale*. Aloud improved his scale to examine Arab-Muslim participant's knowledge about various types of mental health issues (e.g., depression, anxiety, schizophrenia) and familiarity with mental health services (e.g., common formal mental health interventions, location and means of contacting local formal mental health providers). The scale consists of 11 Likert-type items that are marked using a 4-point Likert type scale (i.e., 0 = *Not at All*, 1 = *Very Little*, 2 = *Somewhat*, and 3 = *Very Familiar*). Scores in our edited version range from 0 to 33, with the higher scores indicating a greater level of knowledge about formal mental health services. Three sample items include "How much do you know about: The available mental health services/settings in your community (e.g., location, phone number, type of services)?; Counselor/therapist's role in mental health services/settings?; How to get professional mental health services/counseling when needed (procedures and requirements)?). Aloud reported an overall Cronbach's alpha of .88 for the scale. For the current study, our alpha level for the scale was .89.

We made minor editing to make the scale more appropriate and inclusive for our study (e.g., including the word *issues* as a synonym for the word *problems*; adding "counselor, therapist, and clinical social worker" next to the word "psychologist"; changing "clinical social worker" to "mental health providers." "The Arab and Muslim professionals who practice mental health or psychological counseling […]" within your community (Aloud, 2004; p. 122) was adjusted to "Mental health providers in your community who know, respect, and consider Muslims' faith/religion/spirituality while providing services to Muslims." Through these modifications, the scale seems to become easier to read, comprehend, and respond to. We shared all these changes with the author of the scale, and he found them appropriate.

Inventory of Attitudes, Perceived Social Stigma, and PBC toward Seeking Formal Mental Health Services (IASMHS)

We used the Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS) (Mackenzie et al., 2004) to measure attitudes, perceived social stigma, and PBC toward seeking formal mental health services. The scale consists of 24 Likert-type items with three subscales each of which consists of eight items. Participants are asked to rate each item from 0= Disagree, 1= Somewhat Disagree, 2= Undecided, 3= Somewhat Agree, to 4= Agree. Scores on the IASMHS range from 0 to 96, with subscale scores ranging from 0 to 32, and high scores representing a more favorable/positive approach toward seeking mental health services.

Mackenzie et al. (2004) expanded the original version of the instrument based on Fisher and Turner's (1970) Attitude Toward Seeking Professional Psychological Help Scale (ATSPPHS) to create IASMHS. In addition, Mackenzie et al. improved the modified scale (IASMHS) in away so that it includes three subscales; the psychological openness subscale that measures attitudes, the indifference to stigma subscale that measures perceived social stigma, and the help-seeking propensity subscale that measures PBC toward seeking formal mental health services. The reliability (Cronbach's alpha) score for the overall scale is .87; thus, the scale demonstrated good reliability. The overall Cronbach's alpha for the current study was .83.

Mackenzie et al. (2004) reported that the IASMHS has limited construct validity (convergent and discriminant validity) due to the lack of psychometrically valid and reliable measures. However, the authors explained that the measure has discriminant validity as the instrument allows researchers to "distinguish between those who had and had not used mental health services in the past, and those who would and would not use these services in the future" (p. 2410). The authors examined validity through a community sample and a replication sample to examine the validity more in depth. They included a few items to examine criterion validity, which examined participants' "past use [and] intentions to use mental health services" (p. 2425). The results showed the scale has criterion validity (e.g., r = .33 for past use of professional help and r = .38 for intentions to use professional help and these values were significant at $p < .01$ level for the community sample; r = .21 for past use of professional help and r = .34 for intentions to use professional help for the replication sample). In addition, the authors noted that the measurement has discriminant validity due to its ability to differentiate between the individuals who intend to use professional or nonprofessional help.

The measurement was able to identify the "known-groups validity" (p. 2426), which means women in general hold more positive attitudes for mental health services than men. Known-groups validity is provided when a scale provides expected differences among two or more groups. The authors explained that in general women hold more positive attitudes toward mental health services, and in their study women participants had significantly more positive attitudes than men in both samples ($p < .01$). The authors did not discuss content validity of the measure; however, they adapted and extended one of the most reliable and most used measurements, Fisher and Turner's (1970) ATSPHHS, which could be a good sign of content validity. Collectively, this suggests that the scale overall has sufficient validity to be used.

We included some minor editing to make the scale more appropriate for this current study. These include adding some words in parentheses to clarify some vocabulary since some of our participants did not have English as their first language. For example, "spot, fault, stigma" were added in parenthesis to clarify the word "blot" in the 17th item. We received permission from Mackenzie who found the editing appropriate and meaningful.

Attitudes toward Seeking Formal Mental Health Services (ATFMHS-Attitudes) Subscale

We used the attitude subscale of the IASMHS to measure participants' attitudes toward seeking formal mental health services (ATFMHS-attitudes). The original reliability (Cronbach's Alpha) score for the attitude subscale is .82, providing evidence of good reliability. For the current study, we had the alpha level as .87. The subscale includes eight items all of which are reverse coded. An example of the items on the subscale is "Psychological problems, like many things, tend to work out by themselves" (Mackenzie et al., 2004, p. 2421). High score for this subscale means more favorable ATFMHS-attitudes. The subscale has criterion validity (e.g., r = .34 for community and r = .18 replication samples for past use of professional help, and this was significant at $p < .01$; r = .24 for community and r = .20 for replications samples for intentions to use professional help, and this was significant at $p < .01$).

Perceived Social Stigma toward Seeking Formal Mental Health Services (PSTSFMHS-Stigma) Subscale

We used the indifference to stigma subscale of the IASMHS to measure perceived social stigma toward formal mental health services (PSTSFMHS-stigma). The original reliability (Cronbach's Alpha) for the subscale has been reported as .79, providing evidence of reliability. The alpha level for the current study was .93. The PSTSFMHS-stigma subscale consists of eight items, seven of which are reverse coded. An example is, "I would feel uneasy going to a professional because of what some people would think" (Mackenzie et al., 2004, p. 2422). High scores for this subscale mean less PSTSFMHS-stigma.

The subscale has low criterion validity score in terms of the subscales' strength with the past use of professional help (r = .10 for community sample, not significant); however, r = .14 and was significant ($p < .05$) for the replication sample for the past use of professional help. The subscale also has criterion validity in terms of intentions to use professional help (e.g., r = .24 for community and r = .18 for replication samples, and that was significant at $p < .01$). Overall, the scores show that the subscale is valid especially considering the dearth of alternative instruments.

Perceived Behavioral Control toward Seeking Mental Health Services (PBC) Subscale

We used the help-seeking propensity subscale of the IASMHS to measure perceived behavioral control toward seeking formal mental health services (PBC) (Mackenzie et al., 2004). The original Cronbach's alpha (reliability) is .76, which is in the acceptable range. For the current study we had the alpha level as .93. The subscale consists

of eight items, an example is "If I were to experience psychological problems, I could get professional help if I wanted" (p. 2434). High score on this subscale means a greater level of PBC. The subscale has criterion validity (e.g., r = .34 for community and r = .26 for replication samples for past use of professional help, and this was significant at $p < .01$; r = .43 and .42 for community and replication samples, respectively, for intentions to use professional help, and this was significant at $p < .01$).

Demographic Questionnaire

We used a demographic (background) questionnaire to gather some basic demographic and background variables especially the four variables (education, sex, past behavior meaning use of mental health services, race/ethnicity).

Procedures

Following approval by the University of North Carolina at Greensboro (UNC Greensboro) Institutional Review Board (IRB), as the researchers, we contacted the organizations listed above and shared the link to the survey with individuals in charge of the organizations, and they distributed it through different means (e.g., texts, email lists, social media). The researchers also provided iPads and/or computers at some settings to make it easy for participants to complete the instrumentation. We also distributed a printed version of the survey to the organizations to increase participation and the diversity of the sample, as all participants may have not had access to the internet, a computer or device to access the internet, and/or felt safe to participate online. The participants who wished to respond later were provided with a stamped envelope and printed version of the survey so that they could send the completed survey to the researchers' office. Additionally, the researchers also collaborated with each organization to identify a specific safe and private place for participants who wish to complete and submit the printed version in the envelope.

The link for the questionnaire or printed version consisted of a cover letter, informed consent, the questionnaires, and a demographic (background) survey. The cover letter included a brief explanation of the study, approximate time required to complete the study, a description of an optional dinner at UNC Greensboro that the researchers would organize after the analyses. In this way, anyone interested in the study could learn the results and had a further dialogue related to the study.

The research package also included information about mental health services in case of need, instructions related to completion of the informed consent, and an invitation to contact the researchers with questions. The informed consent included a brief description of the study, approximate time to complete the study, and the potential risks and benefits associated with participation. It specified that participation was voluntary and that agreement to participate could be withdrawn without penalty at any time. To protect privacy, we informed the participants not to sign the printed form. For the printed packages, the participants were provided with two copies of the informed consent and the participants were able to keep one. Participants in the study completed the

instruments and a demographic questionnaire. Completing the survey took about between 20 and 30 minutes for each participant.

Data Analysis

We used a quantitative methodology to examine the descriptive correlational data for the research questions. We used IBM SPSS 22 and LISREL statistical packages to analyze the study's data and alpha coefficients to determine the reliability for each instrument. We used LISREL for the path analyses for analyzing the data because there are two independent (exogenous) variables, four control variables which are also independent, and three dependent (endogenous) variables. The two independent (exogenous) variables affect the three dependent (endogenous) variables directly. Some of the dependent variables also affect the other dependent variables. Therefore, there are many interactions, and it would have been somewhat more difficult and not very accurate to just use regression since alpha level would have increased too much if one tries to analyze the relationships among the variables with regression.

Based on these, we used path analysis, which is a straightforward extension of multiple regression. The goal of using path analysis is to provide estimates of the magnitude and significance of hypothesized causal connections between sets of variables, and this is best explained by considering a path diagram (Kline, 2016). Path analysis is appropriate because it also provides looking at direct and indirect effects of predictor variables (Kline, 2016). In light of these, our path analysis fits the proposed theoretical framework. Through the analysis, we examined part of the framework. In path analysis, one gets many parameters including paths and their coefficients; based on them, one can decide whether the path from one variable to another one is significant or not. In the next paragraphs, we explained analyses in more detail.

For the First Research Question

The first research question: What are the descriptive statistics for the participants' scores on the measure of the five constructs including CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC based on the four background variables: education, sex, past behavior, race/ethnicity?). We employed descriptive statistics including frequency distributions, measure of central tendency, and measure of variability to describe the sample's primary characteristics. For this research question one, the participants' four background variables (education, sex, past behavior, race/ethnicity) were independent variables and the participants' scores on CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC measurements were dependent variables.

For Research Questions from Two to Seven

The Research Questions from two to seven are similar to one another in terms of the variables and analyses. We provided detailed information about each research question in the following table.

Table 1. Description of Research Questions and Data Analyses

Research Questions, Variables, and Analyses					
	Research Questions	**Independent (Exogenous) Variable/s**	**Dependent (Endogenous) Variable/s**	**Variables Controlled For**	**Analyses**
1	What are the descriptive statistics (e.g., mean, standard deviation) for the participants' scores in terms of the five constructs including CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC?	Subpopulations were defined based on participants' background (control) variables: education, sex, past behavior, and race/ethnicity.	The participants' scores on CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC measurements	Not applied	Descriptive statistics analysis
2	Do participants' CBMHP-cultural beliefs scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and KFMHS-knowledge?	The participants' scores on CBMHP-cultural beliefs measurement	The participants' scores on ATFMHS-attitudes measurement	Background (control) variables and KFMHS-knowledge	Significance of path from path analysis
3	Do participants' CBMHP-cultural beliefs scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and KFMHS-knowledge?	The participants' scores on CBMHP-cultural beliefs measurement	The participants' scores on PSTSFMHS-stigma measurement	Background (control) variables and KFMHS-knowledge	Significance of path from path analysis
4	Do participants' CBMHP-cultural beliefs scores explain participants' PBC scores when controlling for background (control) variables and KFMHS-knowledge?	The participants' scores on CBMHP-cultural beliefs measurement	The participants' scores on PBC measurement	Background (control) variables and KFMHS-knowledge	Significance of path from path analysis
5	Do participants' KFMHS-knowledge scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and CBMHP-cultural beliefs?	The participants' scores on KFMHS-knowledge measurement	The participants' scores on ATFMHS-attitudes measurement	Background (control) variables and CBMHP-cultural beliefs	Significance of path from path analysis
6	Do participants' KFMHS-knowledge scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and CBMHP-cultural beliefs?	The participants' scores on KFMHS-knowledge measurement	The participants' scores on PSTSFMHS-stigma measurement	Background (control) variables and CBMHP-cultural beliefs	Significance of path from path analysis
7	Do participants' KFMHS-knowledge scores explain participants' PBC scores when controlling for background (control) variables and CBMHP-cultural beliefs?	The participants' scores on KFMHS-knowledge measurement	The participants' scores on PBC measurement	Background (control) variables and CBMHP-cultural beliefs	Significance of path from path analysis

FINDINGS

In this section, we presented the results of the analyses that were conducted to test the research questions. We provided a detailed description of the sample in the participants section under the methodology above. Therefore, in the following paragraphs, we provided descriptive statistics for the instruments used in the study and results for each research question.

Assessing Normality and Reliability of the Variables in the Research Sample

We assessed assumptions of normality using skewness and kurtosis statistics using IBM SPSS 22. Statistics for four instruments (KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) were within the acceptable range of ≤ ± 1; the statistics for CBMHP-cultural beliefs scale was also within the acceptable range of ≤ ± 2 (See Table 2).

Table 2. Descriptive Statistics for Instruments and Subscales

Instrument	*M*	*SD*	Skewness	Kurtosis	Cronbach α values of the current study	Cronbach α values of the original scales
CBMHP-cultural beliefs	25.19	5.64	-1.03	1.34	.65	.73
KFMHS-knowledge	18.67	7.77	-0.36	-0.32	.89	.88
ATFMHS-attitudes	16.86	8.90	-0.17	-0.94	.87	.82
PSTSFMHS-stigma	15.36	8.65	0.14	-0.96	.93	.79
PBC	20.23	9.26	-0.58	-0.82	.93	.76

Note. SD = Standard deviation; CBMHP = Cultural Beliefs about Mental Health Issues/Problems and Their Causes and Treatments; ATFMHS = Attitudes Toward Seeking Formal Mental Health Services; PSTSFMHS = Perceived Social Stigma Toward Seeking Formal Mental Health Services; PBC = Perceived Behavioral Control Toward Seeking Formal Mental Health Services; KFMHS = Knowledge About Formal Mental Health Services; the overall Cronbach's alpha for the last three scales (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) in this study .83 and the original overall value was .87.

We conducted an analysis to evaluate the reliability of the instruments used in the study. The results of the reliability analyses revealed the following Cronbach's alpha scores (see Table 2): .65 for the CBMHP-cultural beliefs (low internal reliability), .89 for ATFMHS-attitudes (good internal reliability), .87 for PSTSFMHS-stigma (good internal reliability), .93 for PBC (excellent internal reliability), and .93 for KFMHS-knowledge (excellent internal reliability). The overall alpha for three dependent (endogenous) variables (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) was found to have good internal reliability at .83. Reliability for the CBMHP-cultural beliefs in the utilized sample did not reach adequate levels of reliability (α = .65). Although to the knowledge of us as the current researchers there were no other researchers who utilized the scale, it might be helpful to consider the following influences. Aloud (2004) improved the scale especially for Arab Muslims and he found Cronbach's alpha to be .73 (Aloud, 2004), which is in the acceptable range. The scale consists of 11 Likert-type items to measure Muslims' cultural beliefs about mental health issues/problems and their causes and treatments. Compared to Aloud's (2004) study, in our current study, we had more diverse participants in terms of race/ethnicity mainly due to not just recruiting Arabs who lived in Columbus, OH (as in Aloud's study), but any

Muslims who live in the Southeastern U.S. Having an internal consistency value of α = .65 should be considered for future research.

Analyses and Results for Research Question 1

Research Question 1 was, "What are the descriptive statistics (e.g., mean, standard deviation) for the participants' scores in terms of the five constructs including CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC?" In order to get the results for Research Question 1, we used IBM SPSS 22 with the final 209 participants. For the research question, background (control) variables were independent variables and the participants' scores on each scale were the dependent variables. In this way, subpopulations were defined based on participants' background (control) variables of education, sex, past behavior, and race/ethnicity as one can see in Table 3.

Some of the important results based on basic descriptive statistics in terms of the five main constructs are as follows though we did not conduct any significance tests to see if the differences are statistically significant. We did not conduct significant tests for several different reasons (e.g., having few people in some sub-categories, willing to have only a few clear research questions). For the first construct (CBMHP-cultural beliefs) scores were close to one another based on education levels (mean scores for the construct changed from 24.77 for the participants with college degree to 26.50 for the participants with high school education degree; the scores for the construct can change from the lowest a score of zero to the highest possible score of 44). The scores were also very similar based on other background (control) variables because the lowest observed mean score for the construct was 23.74 and the highest observed mean scores for the construct was 26.56. The overall mean for the construct was 25.19 over the highest possible score of 44. All these show that regardless of background (control variables), the participants had slightly high scores on this construct. In addition to these, another important aspect related to the scale is that there are three reverse-coded items (first, second, and sixth) that measured participants' beliefs about contemporary scientific/medical aspect of mental health issues and their causes and treatments, and lower scores/means on these items mean the stronger belief in medical/scientific explanation rather than CBMHP-cultural beliefs.

Table 3. Descriptive Statistics for the Participants' Scores in Terms of the Five Constructs

	CBMHP-cultural beliefs		KFMHS-knowledge		ATFMHS-attitudes		PSTSFMHS-stigma		PBC	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Education										
Less than high school	25.00	1.41	9.00	9.90	19.50	4.95	20.50	2.12	23.50	10.61
High school	26.50	4.62	16.84	6.97	17.16	8.22	13.53	7.01	16.34	8.36

College, Associate degree	24.77	5.61	18.83	7.64	16.68	8.55	16.55	9.18	20.71	8.92
Graduate school	25.09	6.20	19.78	8.12	16.87	9.93	14.49	8.61	21.59	9.79
Sex										
Female	24.89	5.56	18.35	8.24	20.48	8.26	16.64	9.45	17.48	9.90
Male	25.42	5.71	18.94	7.42	14.17	8.42	14.41	7.92	22.28	8.22
Past behavior										
Yes	24.41	6.10	20.80	6.36	23.12	6.45	15.80	9.82	16.05	10.01
No	25.64	5.33	17.48	8.25	13.28	8.11	15.11	7.94	22.62	7.89
Race/Ethnicity										
Black	26.20	4.75	17.68	8.25	19.88	7.99	15.83	8.84	16.86	9.97
Arab	23.74	6.62	18.26	7.62	13.34	9.10	15.18	8.29	23.03	7.55
Asian	25.58	4.52	21.63	6.73	18.49	9.03	13.58	9.40	18.63	9.51
American	24.75	5.83	16.04	8.41	17.25	7.61	19.00	7.54	22.25	8.40
Other	26.56	6.23	20.56	6.01	14.33	8.76	13.00	7.86	22.50	9.33

Note 1. CBMHP = Cultural Beliefs about Mental Health Issues/Problems and Their Causes and Treatments; KFMHS = Knowledge About Formal Mental Health Services ATFMHS= Attitudes Toward Seeking Formal Mental Health Services; PSTSFMHS = Perceived Social Stigma Toward Seeking Formal Mental Health Services; PBC = Perceived Behavioral Control Toward Seeking Formal Mental Health Services.

Note 2. The results showed that the overall means for each of the three reverse-scored items (.58, .48, and .72, respectively, over the possible scores from zero to four) were much lower than the other eight items that were measuring CBMHP-cultural beliefs (the mean scores for the eight items changed from (2.04 to 3.32). Considering these results, the participants appear to have been strongly aligned with explaining mental health issues and their causes and treatments from a scientific/medical perspective while holding CBMHP-cultural beliefs at a moderate level as well.

For the second construct (KFMHS-knowledge), it seems the observed mean scores increase with the level of education increasing. In terms of sex, females had a score of 24.89 and male had a score of 25.42. However, it is important to pay attention that the scores for the construct can range from the lowest score of zero to the highest possible score of 33. The participants who reported that they had utilized mental health services had an observed mean of 20.8 and the ones who reported that they had not utilized the mental health services had an observed mean of 17.48. Therefore, in future studies it might be worth it to run statistical significance tests. Based on all these, the participants overall have a slightly higher mean score (18.67) over the highest possible score of 32 (see Table 2).

For the third construct (ATFMHS-attitudes), the lowest possible score is zero and the highest possible score is 32 with the higher score indicating a more positive/favorable attitude. The participants' overall mean for the construct was 16.86 (see Table 2). Females had much higher scores (*M* = 20.48) than males (*M* = 14.17). The participants who had utilized mental health services had a mean score of 23.12 while the ones who had not utilized had a mean score of 13.28. In terms of race/ethnicity, Black participants had a mean score of 19.88 and the Arabs had a mean score of 13.34.

For PSTSFMHS-stigma construct, the scores change from zero to 32, with the higher score indicating less perceived social stigma. The overall mean was 15.36 indicating a slightly below the midpoint (rather than moderate) level of stigma considering the highest possible score being 32. Based on education level, there is not

a clear pattern because participants with education less than high school had a mean score of 20.50 and individuals with high school education level had a mean score of 13.53. The mean score for females was 16.64 and the mean for the males was 14.41. The participants who had utilized mental health services in the past had a mean score of 15.80 and the ones who had not utilized had a mean score of 15.11. In terms of race/ethnicity, Americans had a mean score of 19, while the other participants from other ethnicities/races had more similar mean scores, ranging from M = 13 to 15.18.

For the last construct, PBC, the lowest possible score is zero and the highest possible score is 32, with the higher scores indicating higher perceived behavioral control (perceived self-efficacy) toward seeking formal mental health services. The overall mean for the construct was M = 20.23. In terms of education level, there was not a regular pattern because the observed mean score for the participants with education less than high school was 23.50 and mean score for the participants with high school education was 16.34. Females had a mean of 17.48 and males had a mean of 22.28. The participants who had utilized mental health services in the past had a mean score of 16.05 and the participants who had not utilized before had a mean score of 22.62. In terms of race/ethnicity, Blacks had a mean score of 16.86 and Arabs had a mean score of 23.03. It is important to highlight that these observed mean scores are based on basic descriptive statistics rather than significance tests. It might meet some important gaps, since there is lack of empirical research about these constructs and the relationship among them, to have more participants and run significance tests for all main constructs based on the background variables.

Analyses and Results for Research Question 2

Research Question 2 was, "Do participants' CBMHP-cultural beliefs scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and KFMHS-knowledge?" We used a path analysis with the participants' scores on CBMHP-cultural beliefs measurement being the exogenous (independent) variable and the participants' scores on ATFMHS-attitudes measurement being the endogenous (dependent) variable while controlling for background (control) variables and the KFMHS-knowledge construct. Based on the path analysis result (see Figure 3), the path is significant, and CBMHP-cultural beliefs explains ATFMHS-attitudes in a negative way (β = -.12, p < .01). This finding can be interpreted as the more a participant holds strong CBMHP-cultural beliefs, the more likely he or she is to have negative ATFMHS-attitudes towards formal mental health services. In addition to these results, all the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) together explained 36% (R^2 = .36) of the variance of ATFMHS-attitudes.

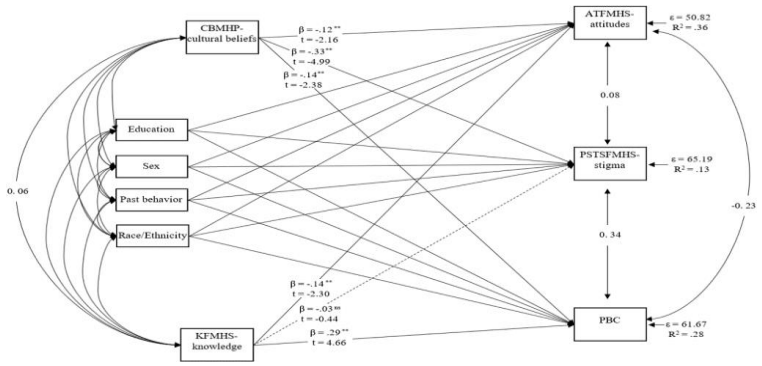

Figure 3. Path Analysis to Understand Muslims' Approach toward Mental Health Issues and Seeking of Formal Mental Health Services. CBMHP=Cultural Beliefs about Mental Health Issues/Problems and Their Causes and Treatments; KFMHS=Knowledge About Formal Mental Health Services ATFMHS=Attitudes Toward Seeking Formal Mental Health Services; PSTSFMHS=Perceived Social Stigma Toward Seeking Formal Mental Health Services; PBC=Perceived Behavioral Control Toward Seeking Formal Mental Health Services. Chi-Square=0.00, *df*=0, *P*-value=1.00000, RMSEA=0.000, ns= not significant

Analyses and Results for Research Question 3

Research Question 3 was, "Do participants' CBMHP-cultural beliefs scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and KFMHS-knowledge?" We ran path analysis with the participants' scores on CBMHP-cultural beliefs measurement being the exogenous (independent) variable and the participants' scores on PSTSFMHS-stigma measurement being the endogenous (dependent) variable while controlling for background (control) variables and KFMHS-knowledge construct. Based on the path analysis result (see Figure 3), the path is significant. CBMHP-cultural beliefs explains PSTSFMHS-stigma in a negative way (β = -.33, p < .01). In other words, the more a participant holds strong about mental health problems (CBMHP-cultural beliefs), the more likely that he or she might have a negative perception of the stigma of seeking mental health services (PSTSFMHS-stigma). In addition to these results, all the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) together explained 13% (R-square = .13) of the variance of PSTSFMHS-stigma.

Analyses and Results for Research Question 4

The fourth research question was, "Do participants' CBMHP-cultural beliefs scores explain participants' PBC scores when controlling for background (control) variables and KFMHS-knowledge?" We ran a path analysis with the participants' scores on CBMHP-cultural beliefs measurement being the exogenous (independent) variable and the participants' scores on PBC measurement being the endogenous (dependent) variable while controlling for background (control) variables and KFMHS-knowledge construct. Based on the path analysis result (see Figure 3), the path is significant, and CBMHP-cultural beliefs explains PBC in a negative way (β = -.14, p < .01). This finding could mean that the more a participant holds strong cultural beliefs about mental health problems (CBMHP-cultural beliefs), the more likely the participant might have a low level (score) for PBC. In addition to these results, all the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) together explained 28% (R-square = .28) of the variance of PBC.

Analyses and Results for Research Question 5

Research Question 5 was, "Do participants' KFMHS-knowledge scores explain participants' ATFMHS-attitudes scores when controlling for background (control) variables and CBMHP-cultural beliefs?" To determine the result, we ran a path analysis with the participants' scores on KFMHS-knowledge measurement being the exogenous (independent) variable and the participants' scores on ATFMHS-attitudes measurement being the endogenous (dependent) variable while controlling for background (control) variables and CBMHP-cultural beliefs construct. Based on the path analysis result (see Figure 3), the path was significant, and KFMHS-knowledge explains ATFMHS-attitudes in a negative way (β = -.14, p < .01). This finding could be interpreted to suggest that the more a participant had knowledge of formal mental heather services (KFMHS-knowledge), the more likely he or she might have negative attitudes toward formal mental health services (ATFMHS-attitudes). Almost the rest of the Muslim mental health literature stating (although not all of them are based on empirical research) that the more Muslims have knowledge of formal mental health services the more likely they have positive/favorable attitudes toward seeking formal mental health services. As mentioned above, the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) all together explained 36% (R-square = .36) of the variance of ATFMHS-attitudes.

Analyses and Results for Research Question 6

Research Question 6 was, "Do participants' KFMHS-knowledge scores explain participants' PSTSFMHS-stigma scores when controlling for background (control) variables and CBMHP-cultural beliefs?" We ran a path analysis with the participants' scores on KFMHS-knowledge measurement being the exogenous (independent) variable and the participants' scores on PSTSFMHS-stigma measurement being the endogenous (dependent) variable while controlling for background (control) variables and CBMHP-cultural beliefs construct. Based on the path analysis result (see Figure 3), the path is not significant (β = -.03), indicating there was not a positive or negative relationship between KFMHS-knowledge and PSTSFMHS-stigma for the participants in this study. As mentioned above, all the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) together explained 13% (R-square = .13) of the variance in PSTSFMHS-stigma construct.

Analyses and Results for Research Question 7

Research Question 7 was, "Do participants' KFMHS-knowledge scores explain participants' PBC scores when controlling for background (control) variables and CBMHP-cultural beliefs?" We used a path analysis with the participants' scores on KFMHS-knowledge measurement being the exogenous (independent) variable and the participants' scores on PBC measurement being the endogenous (dependent) variable while controlling for background (control) variables and CBMHP-cultural beliefs construct. Based on the path analysis result (see Figure 3), the path is significant, and KFMHS-knowledge is explaining PBC in a positive way (β = .29, p < .01). This finding indicates that the more a participant held knowledge of formal mental health services (KFMHS-knowledge) the more likely they were to report perceived behavioral control (PBC, meaning perceived self-

efficacy) toward seeking formal mental health services if needed. As explained above, the independent variables (CBMHP-cultural beliefs, KFMHS-knowledge, and the four background variables) combined explained 28% (R^2 = .28) of the variance of the PBC construct.

DISCUSSION

Through our study's results, we add a significant contribution to the mental health overall and especially to the Muslim mental health research and services. In the following sections, we provided more detailed discussion of the reported results.

Discussion of Empirically Testing the Well-Grounded Theoretical Framework

Our main goal for the present study was testing the contextual theoretical framework entitled *understanding Muslims' approach toward mental health issues and services based on Theory of Planned Behavior and Theory of Reasoned Action (TPB/TRA) in the context of Social Ecological Model (SEM)*. It was an important gap in the larger mental health and specifically in Muslim mental health to use SEM and TPB/TRA together and test it because previous researchers strongly called for use of these theories or models together. From this perspective, an important gap is partially closed. And the results add a significant value to the related literature. In more details, we aimed to explore the adult Muslims' approach (the five constructs: CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) toward mental health issues and formal mental health services considering the seven research questions from our theoretical framework perspective. All these close some important gaps and add a significant contribution to the Muslim mental health research.

Many researchers in the Muslim mental health literature called for empirically and well-grounded research while only few did so. In this perspective, our study overall supports and aligns with the ones used or called for use of a framework. By meeting this overall gap, we believe our study is very unique and will expand understanding Muslims' approaches toward mental health issues and services and also how mental health providers as researchers and providers can utilize the results to move forward.

Discussion of Background Variables and Scales

Overall, the results of the study are consistent with the results of the larger literature review while some other results are not. Additionally, some unique research results are not possible to compare to the larger literature because the researchers in the literature of Muslim mental health have not addressed them whatsoever.

In terms of background (control) variables and the main five constructs, there were no specific regular patterns except that overall participants' KFMHS-knowledge score increased gradually when their education level increased, which makes sense and aligns with some studies from overall and Muslim mental health literature. However, we did not test for significant differences based on the background variables. In terms of the larger Muslim mental health literature, the studies found different results. More detailed information is provided in the sections that follow.

Another important overall result worth to be discussed was considering the reliability (overall Cronbach's alpha) values for the scales. One of the main limitations in this study was the weak Cronbach's alpha (.65) for the CBMHP-cultural beliefs scale, while the original value was .73 in Aloud's (2010) work. We edited the scale to make it more appropriate for the participants and not just for Arab-Muslims. There is a lack of well-established scales to measure CBMHP-cultural beliefs; therefore, we believe using the scale in a few other studies might provide a more effective understanding for its reliability. Because of all these modifications and low value, the scale should be used with these points in mind, and this might be subject for future research since use of the scale for additional research requires further examination.

For the KFMHS-knowledge scale, the Cronbach's value in this current study (.89) slightly increased compared to the original scale (.88); the current researchers also slightly modified the scale to make it more appropriate, and it seems the modified version is appropriate for use with any Muslims, not just with Arab-Muslims. For the third scale (ATFMHS-attitudes), the Cronbach's alpha value (.87) increased compared to the original value (.82). For the next scale (PSTSFMHS-stigma), the Cronbach's alpha value (.93) increased compared to the original value (.79). For the last scale (PBC), the overall Cronbach's alpha value (.93) also increased compared to the original scale (.76). We also had some minor editing for the questions, and it seems these also have been effective. However, the overall alpha values for the last three scales (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) decreased slightly for the current study (.83) compared to the original value (.87).

Overall, the scales could be used because the Cronbach's alphas are within an acceptable range except for the first one, which has a low value (yet can be used with caution due to lack of the scales). Our current study is important because Aloud (2010) developed and used the first two scales, but only with Arab-Muslims, and no other researchers utilized the other three scales by themselves or together with Muslims. Therefore, this study is meeting some important needs in the Muslim mental health literature by modifying and utilizing the scales and overall having acceptable and improved Cronbach's alpha values compared to the original values.

Discussion of the Research Questions' Results

Discussion of Research Question 1

We had 209 adult Muslims (89 female and 120 male) from the Southeastern U.S. Compared to most other research studies concerning Muslim mental health, this ratio of females to males is not an unexpected result because in many studies the number of males is greater or much greater than females (e.g., Ali & Milstein, 2012; Aloud & Rathur, 2009; Tanhan & Francisco, 2019; Khan, 2006), except for a few studies (e.g., Bagasra, 2010; Bagasra & Mackinem, 2014) in which there were more females than males. Additionally, in some cases, the number of males is greater than the female participants; therefore, the ratio of females to males is more balanced in this current study. In general, one of the reasons that the number of males is more than females might be that most of the researchers have collaborated with Islamic centers (especially mosques) where males

are more present because of some obligatory prayers (e.g., going to Friday prayer every week is an obligation for Muslim man, while it is optional for a Muslim woman).

In this current study, we collaborated with the two largest Islamic centers in the area to deliver the printed version and to distribute the online survey. The directors of the centers reported that they have more male attendees and contact information (e.g., email, phone numbers, social media) that they used for distributing the survey. Another reason could be that the main researcher was male, and more male participants from the community felt it was easier to participate due to familiarity with the researcher. These might be some of the main reasons that males outnumbered females. This information is important from an SEM perspective because the contextual factors and resources affect one's availability to reach out for the services.

Discussion of CBMHP-cultural beliefs Construct and its Descriptive Statistics

For the first construct (CBMHP-cultural beliefs), participants' scores were close to one another across all background variables and their subcategories, and the overall mean for the construct was 25.19 with the standard deviation being 5.64 (the highest possible score on the scale is 44). All these could suggest that regardless of background variables and their subcategories, the participants have a slightly high level of holding cultural beliefs about mental health issues/problems and their causes and treatments (CBMHP-cultural beliefs). This construct has been stressed by almost every researcher in the Muslim mental health literature, although to our knowledge only few researchers (e.g., Aloud, 2004; Bagasra, 2010; Tanhan & Francisco, 2019) empirically looked at similar constructs through quantitative studies.

For example, researchers Aloud (2004) and Aloud and Rathur (2009) found that CBMHP-cultural beliefs play an important role in Arab-Muslims' approach toward mental health services, and Aloud found that the Arab-Muslim participants in Columbus, OH had a mean of 2.41 (over the highest possible score of 4) for this construct, while they had less belief in contemporary medical perspective of mental health issues and health services. Unlike Aloud, other researchers (Bagasra, 2010; Bagasra & Mackinem, 2014) found that Muslims in the U.S. (a majority being from the Southeast and/or South) held such a cultural perspective and the medical perspective to explain mental issues and their treatments. The results of this current study align a little more with the later researchers because the participants had a mean of 25.19 (out of a highest possible score of 44 on the scale), which is slightly higher than average. Many researchers (e.g., Youssef & Deane, 2006) in the literature stated that Arabs hold such cultural beliefs strongly; however, in this current research, the participants who identified themselves as Arab had the lowest score (23.74) on the construct (CBMHP-cultural beliefs) across the race/ethnicities. This might be an important point to examine in more detail in future research looking at contextual factors (e.g., local collaborations, resources, advertisements for mental health services).

In addition to these, another crucial point to consider is that the scale had three reverse-coded items (one, two, and six) that measured one's beliefs about the scientific/medical aspect of mental health issues and their causes and treatments. Lower scores/means on these items mean the participants held stronger beliefs in medical/scientific explanation than CBMHP-cultural beliefs. The results showed that the overall means for each of the three reverse-scored items (.58, .48, and .72, respectively, over the possible scores from zero to four) were much lower than the other eight items that were measured CBMHP-cultural beliefs (the mean scores for the eight items changed from 2.04 to 3.32). Based on these three items and these main descriptive statistics, it seems the participants strongly align with explaining mental health issues and their causes and treatments from a scientific/medical perspective while holding CBMHP-cultural beliefs at a moderate level. In terms of these results, the current research results align more with Bagasra's (2010) study.

All these results related to CBMHP-cultural beliefs indicate that mental health providers can benefit from paying close attention to understanding how the cultural and scientific/medical beliefs/perspectives related to mental issues and their treatments might create some challenges and uneasiness for Muslims. For example, mental health providers can take time to become more familiar with the cultural beliefs so that they become more culturally competent and create a safer place so that the Muslims can feel comfortable enough to share their perspectives. In this way, the mental health providers can bring awareness to the functional and dysfunctional cultural beliefs for the client(s) and make the process more engaged, meaningful, and productive.

It may be very helpful that mental health providers are open to seeing and discussing the cultural beliefs from a curiosity and strengths-based perspective to understand how they function or do not function for the person or community rather than putting those beliefs down and trying to eliminate and dispute them to replace with contemporary scientific findings. The mental health providers also can work toward creating a place to provide and discuss more scientific explanations of mental issues and their treatments so that the Muslims might become more familiar with that perspective as well since they held scientific explanations stronger than the cultural beliefs. Considering CBMHP-cultural beliefs from TPB/TRA and SEM is also very crucial as Tanhan and Young (2021) explained in detail.

Discussion of KFMHS-knowledge Construct and its Descriptive Statistics

For the second construct (KFMHS-knowledge), the participants in this current study overall had a slightly high amount of knowledge about formal mental health services because the overall mean for the construct for all the participants was 18.67 (out of a highest possible score of 33), with the standard deviation being 7.77. The researchers (Aloud, 2004; Aloud & Rathur, 2009) empirically examined this construct for Arab Muslims and found that the participants had a mean score of 2.02 (with the highest possible score being 4 and *SD* = .62). Similarly, other researchers in their qualitative studies reported (especially for key people like imams and health providers in the community) that Muslims have knowledge of mental health services and issues (e.g., Ali & Milstein, 2012; Tanhan & Strack, 2020), while others reported otherwise (e.g., Cook-Masaud & Wiggins, 2011; Tanhan & Francisco, 2019; Youssef & Deane, 2006). Therefore, the results of this construct in this study fits the larger

picture considering Muslims to have a slightly high level of knowledge; however, further examination will be important to understand this construct more in-depth.

One of the observed results is that the mean scores increase gradually with the level of education increasing. The participants who had utilized mental health services had a mean of 20.8 and the participants who had never utilized the services had a mean of 17.48, which can be examined in more detail with significance tests. This second construct has been stressed by nearly all researchers, although not examined empirically, and in general they found that Muslims do not have KFMHS-knowledge. Americans (across race/ethnicity) had the lowest KFMHS-knowledge level, which does not fit the larger research body at all. One of the main reasons could be that some Americans identified themselves with other races rather than just saying American; however, more in-depth study is needed to understand that.

Based on these results, the mental health providers can collaborate at an individual and community level using different avenues (e.g., face-to-face, organizing informative events, events on local and national media, creating groups and pages on social media) to understand more in detail and increase Muslims' level of knowledge and awareness of mental health issues and especially of the services.

KFMHS-knowledge from TPB/TRA perspective is important because from the theory perspective knowledge indirectly (as background factors) affect one's intention and behavior through one's attitudes, stigma, and PBC. Although from the TPB/TRA perspective KFMHS-knowledge is not empirically examined and even in some studies found to be nonsignificant with main constructs (e.g., attitudes, stigma), the role of having knowledge becomes very crucial when the subject of interest is not familiar with the subjects. In this case, Muslims were not very familiar with mental health services based on this current research, and especially based on Muslim mental health literature. From the SEM perspective, examining and focusing on KFMHS-knowledge is necessary because having or not having knowledge of a subject directly affects one's approach, and SEM stresses how one needs to pay attention to environment and system to provide knowledge and awareness while trying to promote a behavior rather than just focusing on intrapersonal processes. Therefore, KFMHS-knowledge is very important and crucial to be considered by itself and how it interacts with other constructs since both TPB/TRA and SEM see KFMHS-knowledge and other constructs (e.g., knowledge, stigma) in a contextual perspective that affect one another.

Discussion of ATFMHS-attitudes Constructs and its Descriptive Statistics

For the third construct (ATFMHS-attitudes), the overall mean for the participants was 16.86 over the highest possible score of 32. This construct is one of the most empirically studied constructs, which makes it more important. The researchers reported contradicting results. Aloud (2004) found that Arab-Muslims in his study held negative ATFMHS-attitudes (M = 2.36 over four), and similar results were reported by multiple researchers (e.g., Youssef & Deane, 2006; Tanhan & Francisco, 2019). While some researchers found a significant correlation between control variables (e.g., education, sex) and ATFMHS-attitudes (e.g., Khan, 2006; Youssef & Deane, 2006),

others did not find such a meaningful correlation (e.g., Aloud & Rathur, 2009). For example, Khan (2006) found Muslim women to hold a more positive approach toward seeking the services. Based on these results, the research results of this current study overall fit in the larger picture with the one reporting that Muslims have scores at a moderate level for ATFMHS-attitudes. In terms of background variables and ATFMHS-attitudes, the results of this current study contradict some studies (e.g., Aloud, 2004; Bagasra, 2010; Ciftci et al., 2013) because in the current study the higher education level, the lower mean scores for ATFMHS-attitudes were observed. However, the current study results align with some other research results (e.g., Aloud & Rathur, 2009; Ciftci et al., 2013) from some other aspects because similar to other research, in this current study females had much higher observed scores (M = 20.48) than males (M = 14.17). Similarly, participants who had utilized mental health services had much higher observed scores (M = 23.12) than ones who had not utilized mental health services (M = 13.28). In terms of race/ethnicity, in this current study Black participants had the highest mean score (19.88) and Arabs had the lowest mean scores (13.34), which contradicts some researchers who found Americans (e.g., Aloud, 2004) had higher scores for ATFMHS-attitudes and fits more with some others (e.g., Khan, 2006) who found Asians had more favorite approaches than Americans.

Mental health providers can share these results with the Muslim community to start a discussion about seeking mental health services and what these average scores of ATFMHS-attitudes mean for Muslims. Starting such a conversation with key people and/or organizations in the community (e.g., imams, spiritual leaders, community leaders, and Muslim organizations like mosques or MSA) might be crucial since Muslims neither have strong favorable or unfavorable ATFMHS-attitudes. Based on the Muslim mental health literature, key people had much stronger favorable ATFMHS-attitudes and they are the gatekeepers to reach out to the community. Therefore, they might be the most effective ones to collaborate with to increase favorable ATFMHS-attitudes.

In terms of ATFMHS-attitudes and PSTSFMHS-stigma, the higher the level of education the less favorable ATFMHS-attitudes and more PSTSFMHS-stigma, which contradicts a majority of the body of research. Therefore, more in-depth understanding beyond basic descriptive statistics is necessary. From the two main theoretical lenses (TPB/TRA and SEM) perspective, examining ATFMHS-attitudes is important. It is a main construct in TPB/TRA at the intrapersonal level, and the construct has an important role in SEM to consider it in a contextual perspective related to other larger systems (e.g., culture, institution, media) rather than just at the intrapersonal level. Therefore, understanding the results and implications based on them is important.

Discussion of PSTSFMHS-stigma Construct and its Descriptive Statistics

For PSTSFMHS-stigma construct (the fourth construct) the overall mean score of the participants was 15.36 (over the highest possible score of 32). The researchers examined this construct both through quantitative and qualitative research and found Muslims having a high or moderate level of perceived social stigma (e.g., Ciftci et al., 2013; Herzig et al., 2013; Soheilian & Inman, 2009; Thomas et al., 2015), except for few researchers (e.g., Bagasra, 2010). From this perspective, this current research fits with most of the research literature because the participants' scores were slightly lower for PSTSFMHS-stigma. In terms of background variables, this current

study contradicts other studies because some researchers found (e.g., Bagasra et al., 2013) the higher the education level one achieved the less the PSTSFMHS-stigma. However, in this current study, there was not a pattern because the participants with education lower than high school had the highest observed mean score (*M* = 20.50; meaning the less perceived social stigma) while the participants with higher levels of education had the lowest observed mean score (*M* = 13.53; meaning the most perceived social stigma).

In terms of sex, the current study also contradicts some studies because females had a mean score of 16.64 while males had a mean score of 14.41 while many other researchers found females had more PSTSFMHS-stigma. The participants who had utilized mental health services in the past had a slightly higher mean score (*M* = 15.80) than those who had not (*M* = 15.11). In terms of race/ethnicity, Americans had the highest observed score (*M* = 19, meaning the least perceived social stigma) while the other participants from other ethnicities/races had close observed mean scores, ranging from 13 to around 15. In order to understand and have less PSTSFMHS-stigma among Muslims in an effective way, mental health providers might benefit from paying attention to the previous constructs based on the Muslim mental health literature, as we explained in the previous sections (e.g., creating a safe and welcoming place where Muslims can discuss their cultural beliefs, mental health providers collaborating through different avenues to increase Muslims' level and awareness of KFMHS-knowledge, and collaborating with key people/organizations to discuss Muslims' ATFMHS-attitudes). Perceived social stigma is a main construct in both TPB/TRA and SEM, and it is important to examine and understand it from different perspectives. Therefore, considering PSTSFMHS-stigma in this study at the individual level and how it is related to other larger factors (e.g., cultural beliefs) is important.

Discussion of PBC Construct and its Descriptive Statistics

For the last, fifth, construct (PBC), the overall mean for the participants was 20.23 over the highest possible score of 32, meaning the participants had quite high scores in terms of perceived self-efficacy to be able to seek/utilize mental health services if they needed. This is an important construct that some of the researchers mentioned indirectly, and yet to our knowledge, none examined it empirically. Therefore, there is no empirical data to compare to the results of this study. However, some of the researchers consistently indicated that Muslim women had many more barriers (e.g., transportation, facing more stigma/pressure from community if seeking mental health services). Therefore, they were less likely to have high PBC. The result of this study may support this assumption because female participants had a much lower mean (*M* = 17.48) than males (*M* = 17.48 and 22.28, respectively).

Another important point for PBC and education level is that there was no regular pattern because the participants with education less than high school had the highest observed mean scores (*M* = 23.50) while the participants with high school education had a mean score of 16.34. The participants who had utilized mental health services in the past had a much lower mean score (*M* = 16.05) than the participants who had not (*M* = 22.62). In terms of race/ethnicity, Blacks had the lowest mean score (*M* = 16.86), while Arabs had the highest mean scores (*M* =

23.03). All these scores require more in-depth study to understand them more fully and especially if there are any statistically significant differences.

PBC is a very new construct in Muslim mental health literature; however, based on the limited literature of Muslim mental health, TPB/TRA, and SEM, mental health providers can pay attention to all points mentioned above to have a holistic and systematical approach to bring awareness to PBC. The providers can create a space for discussion and awareness for Muslims and their PBC level at the individual and community level. Therefore, mental health providers—based on limited literature on Muslim mental health, TPB/TRA, and SEM— can first pay attention to see if there are actual (physical) resources like availability of mental health services (e.g., clinic, center, providers who strive for culturally competency). Then, the mental health providers can try to understand if Muslims are aware and have knowledge of those services to systematically approach the Muslim community to increase their PBC.

In terms of PBC level and past behavior of use of mental health services, it is important to understand what caused the participants who had used mental health services in the past to have less PBC, while the literature reports otherwise (e.g., Cook-Masaud & Wiggins, 2011; Tanhan & Strack, 2020; Tanhan, 2014, 2019). Based on all these, the results of the first research question should be interpreted with caution. These results are based on the basic descriptive statistics rather than significance tests, and could be the subject of future research to understand them in greater depth. The different and contradictory results among the research results should be considered from the SEM perspective that stresses the interaction among contextual factors, meaning Muslims in one community, city, or region might have different contextual factors that affect their approach toward mental health issues and services. Overall, the participants in this study compared to most of the other studies have a slightly more positive approach toward seeking mental health services based on the four constructs (CBMHP-cultural beliefs, KFMHS-knowledge, ATFMHS-attitudes, and PBC). The only exception is for PSTSFMHS-stigma in which the participants overall mean is 15.36 (over the highest score of 32), which shows that the average score was slightly below the midpoint of 16. This means some slightly strong stigma. All these overall results are similar to Bagasra's (2010) study. She had most of her participants from the southeastern U.S..

From this perspective, we have been aware that some mental health providers as researchers and providers at universities in this area have been striving to collaborate with the larger population, including the Muslim community, to provide mental health services at different levels (e.g., individual and group counseling, psychoeducation, and/or working with the community through projects to reach out to more people and address psychosocial issues at more system level; e.g., Tanhan & Francisco, 2019; Tanhan & Strack, 2020). Another contextual factor/aspect to consider while interpreting the overall results is that one of the two Islamic centers (mosques) has collaborated more with a counseling department in the area and also with some other mental health providers to provide some psychoeducational sessions. The administrators at this center delivered printed version of the survey, and about 50 Muslims participated. However, these contextual/local collaborations cannot

be seen in a causal-effect relationship. Further research and analyses are necessary to make more contextually and statistically accurate interpretations of these results.

Discussion of Research Question 2

The path from CBMHP-cultural beliefs (exogenous variable) to ATFMHS-attitudes (endogenous variable) is significant and explains ATFMHS-attitudes in a negative way (β = -.12, p < .01) while controlling for background and KFMHS-knowledge variables. This finding indicates that the more a participant holds strong CBMHP-cultural beliefs, the more likely he or she is to have negative ATFMHS-attitudes. This result overall fits with the larger literature on Muslim mental health because a majority of the researchers found such a negative relationship between CBMHP-cultural beliefs and ATFMHS-attitudes (e.g., Aloud, 2004; Aloud & Rathur, 2009; Tanhan & Francisco, 2019). As we previously explained, the overall Cronbach's alpha for the current study of .87 improved somewhat compared to the original scale of .82; this shows the scale was appropriate to use. However, since the Cronbach's alpha for CBMHP-cultural beliefs scale (α = .65) was low, it is important to keep in mind that in terms of CBMHP-cultural beliefs, the participants held slightly high scores on the construct.

Almost all the researchers in the Muslim mental health literature constantly and strongly stressed the importance of considering CBMHP-cultural beliefs while providing mental health services to Muslims (Amri & Bemak, 2013; Ciftci et al., 2013; Khan, 2006; Tanhan, 2019; Tanhan & Young, 2021; Thomas et al., 2015; Youssef & Deane, 2006). The researchers also consistently called for more research to improve the measurements that have good psychometric features or at least utilize existing scales with different Muslim populations for empirical research due to a lack of well-established scales examining Muslims' CBMHP-cultural beliefs. To our knowledge this is the first study in which the scale was modified and utilized for empirical research with Muslims following Aloud's developing the scale for Arab-Muslims. Therefore, our current study is meeting an important need in the literature of Muslims and mental health. From TPB/TRA and SEM (theoretical lenses) perspectives, the significant path relationship is understandable because cultural beliefs are crucial factors affecting one's attitudes. This relationship is even more significant from the SEM perspective since the emphasis in SEM is on the system and how it affects the individual.

Discussion of Research Question 3

The path from CBMHP-cultural beliefs (exogenous variable) to PSTSFMHS-stigma (endogenous variable) is significant and explains PSTSFMHS-stigma in a negative way (β = -.33, p < .01) while controlling for background and KFMHS-knowledge variables. This finding can be interpreted as the more a participant held strong CBMHP-cultural beliefs the more likely he or she was to have PSTSFMHS-stigma. This result fits with most of the larger literature of Muslim mental health because a majority of the researchers found such a negative relationship between CBMHP-cultural beliefs and PSTSFMHS-stigma (e.g., Aloud, 2004; Aloud & Rathur, 2009; Ciftci et al., 2013; Tanhan, 2019). As we previously explained, we modified the scale and the overall Cronbach's alpha increased for this study (α =.93 compared to the original value .79), and this is an indication that the scale was

appropriate to use. The results fit with what researchers in the Muslim mental health stated; the stronger Muslims hold CBMHP-cultural beliefs, the less likely they have high PBC and seek mental health services. That means the mental health providers need to consider both of the constructs, especially the CBMHP-cultural beliefs.

As most of the researchers stated (e.g., Ciftci et al., 2013; Tanhan, 2014, 2019), the relationship between these two constructs is very crucial because even the researchers who found that Muslims do not hold strong CBMHP-cultural beliefs (e.g., Bagasra, 2010) found that Muslims have an important amount of PSTSFMHS-stigma. Another important point is considering that the path with the strongest path coefficient is from CBMHP-cultural beliefs to PSTSFMHS-stigma among the six main paths. That might mean the mental health providers could benefit from paying attention to these two constructs much more closely than any other construct based on the current results, which was also strongly suggested by some other researchers (e.g., Amri & Bemak, 2013). The consideration of CBMHP-cultural beliefs and PSTSFMHS-stigma is crucial from the SEM perspective because SEM emphasizes understanding perceived social stigma in the context rather than just at intrapersonal and/or interpersonal levels. PSTSFMHS-stigma is one of the main constructs in TPB/TRA and understanding it in a contextual perspective with CBMHP-cultural beliefs is more important. TPB/TRA sees cultural beliefs as factors leading to stigma in an indirect way, and the importance of such beliefs becomes much more important when the topic of interest is new to the participants (Fishbein & Ajzen, 1975, 2010). In terms of TPB/TRA and SEM (theoretical lenses) perspectives, the significant relationship is meaningful because cultural beliefs are crucial factors affecting perceived social stigma. This relationship is much more meaningful from an SEM perspective because individuals are placed in their culture where culture as a larger system has a constant and strong effect on the individual system.

Discussion of Research Question 4

The path from CBMHP-cultural beliefs (exogenous variable) to PBC (endogenous variable) is significant and explains PBC in a negative way (β = -.14, p < .01) while controlling for background and KFMHS-knowledge variables. These findings indicate that the more a participant holds strong CBMHP-cultural beliefs the less likely he or she is to have high PBC which means perceived self-efficacy toward seeking mental health services if they need it. None of the researchers in the Muslim mental health literature empirically examined PBC for Muslims and mental health, although only Tanhan and Young (2021) directly mentioned the concept. Therefore, there is a lack of direct and especially empirical research about this construct. As previously explained, the overall Cronbach's alpha (α =.93 compared to the original value of .76) for this study improved, which could be an indication that the scale was appropriate to use.

Understanding PBC in such a contextual perspective is crucial from the SEM perspective because many researchers (e.g., Aloud & Rathur, 2009; Amri & Bemak, 2013) indirectly (without calling it PBC or self-efficacy) and Tanhan and Young (2021) directly mentioned PBC and recommended considering a more contextual (comprehensive) perspective. From the TPB/TRA perspective, PBC is one of the most important constructs in

understanding one's approach toward the behavior of interest (Ajzen, 2006; Fishbein & Ajzen, 2010). Researchers (e.g., Romano & Netland, 2008; Tanhan & Young, 2021) specifically called for mental health providers to utilize TPB/TRA and to pay attention to PBC. Therefore, this study meets an important gap and call in the literature of mental health, especially in Muslim mental health. The relationship between CBMHP-cultural beliefs and PBC is the third strongest path among the five main variables. It might be important to keep in mind that the CBMHP-cultural beliefs construct is one of the most commonly explained constructs while PBC is the least mentioned construct in the Muslim mental health literature. Therefore, further empirical research is needed to understand more in depth what this relationship means.

The significant path (relationship) between CBMHP-cultural beliefs and PBC is understandable from TPB/TRA and SEM perspectives. From the SEM perspective, the relationship is more understandable because one's culture is a strong system that directly affects one's approach toward acting on the topic of interest as previous researchers also explained in detail from theoretical perspectives of SEM and TPB/TRA (Tanhan & Young, 2021).

Discussion of Research Question 5

The path from KFMHS-knowledge (exogenous variable) to ATFMHS-attitudes (endogenous variable) is significant and explains ATFMHS-attitudes in a negative way (β = -.14, p < .01) while controlling for background and CBMHP-cultural beliefs variables. This finding indicates that the more a participant has KFMHS-knowledge, the more likely he or she is to have negative ATFMHS-attitudes. This finding is contradictory with the rest of the Muslim mental health literature because the rest of the research on Muslim mental health state that the more Muslims have KFMHS-knowledge, the more likely they have favorable ATFMHS-attitudes (although not all of them are based on empirical research). It might be important to keep in mind that all the survey and data collection was through self-reporting and the current researchers did not check for the accuracy of the participants' KFMHS-knowledge. The participants might have some misinformation and/or misconceptions about formal mental health services. From SEM and TPB/TRA perspectives, this construct is important, especially when the topic or the behavior of interest is new to the participants.

In addition to these perspectives, Cottrell and others (2015) explained how different individual/intrapersonal or community theories stress level of knowledge to understand the behavior of interest. Based on all of these and especially that almost all the researchers (e.g., Abu-Ras, 2003; Cook-Masaud & Wiggins, 2011; Tanhan, 2014; Tanhan & Strack, 2020) in the Muslim mental health reported that Muslims' lack of KFMHS-knowledge is related to negative approaches toward mental health services. Except for few researchers none examined Muslims' KFMHS-knowledge through empirical ways, further and more systematical research is needed. For example, improving this current scale or developing a new scale to examine the accuracy of one's KFMHS-knowledge, misinformation, and/or misconceptions about mental health services and then looking at the relationship between KFMHS-knowledge and ATFMHS-attitudes is warranted.

This result does not fit with the TPB/TRA of the SEM perspective. From the TPB/TRA perspective, knowledge is a background factor that affects one's attitudes in a positive way, yet not at a significant level. There are some empirical studies from the TPB/TRA perspective that found there is a positive (yet not significant) relationship between knowledge and the behavior of interest. From the SEM perspective, the negative relationship between KFMHS-knowledge and ATFMHS-attitudes is not understandable since it is through the main theme of SEM that individuals and communities who have knowledge will be more likely to have a more favorable approach. Based on all these, the results of this research question should be interpreted and used with extreme caution.

Another consideration for interpreting the results is that participants could have had a mental health experience where they were not served effectively (e.g., lack of mental health providers who do not strive for culturally competency) and therefore hold less favorable attitudes toward formal mental health services while having high knowledge about the services. This can be the subject of future research.

Discussion of Research Question 6

The path from KFMHS-knowledge (exogenous variable) to PSTSFMHS-stigma (endogenous variable) is not significant and is the only path that is not significant (β = -.03) while controlling for background and CBMHP-cultural beliefs variables. This finding indicates that there was not a regular relationship found between the participants' KFMHS-knowledge and their PSTSFMHS-stigma. This result also does not fit with the results in the larger Muslim mental health literature because most of the researchers (e.g., Aloud, 2004; Aloud & Rathur, 2009; Ciftci et al., 2013) indicated that the more Muslims have KFMHS-knowledge the less they have PSTSFMHS-stigma, although not many of them conducted empirical research about Muslims' KFMHS-knowledge and its relationship with PSTSFMHS-stigma. As we explained in the previous research question's discussion, more systematic and comprehensive studies and scales are necessary to examine Muslims' KFMHS-knowledge because the current scale for KFMHS-knowledge is only based on self-reporting and does not measure the accuracy of one's KFMHS-knowledge.

From the TPB/TRA perspective, the lack of significance is acceptable because from the theory perspective, knowledge in general is not a good/significant predictor. However, the lack of a positive relationship between KFMHS-knowledge PSTSFMHS-stigma in this study (meaning higher scores on knowledge construct will predict higher scores on stigma construct, which means less stigma) is not understandable. From the SEM perspective, the individual and communities with higher knowledge toward a subject are more likely to have less perceived social stigma. Therefore, the result should be interpreted very carefully.

Discussion of Research Question 7

The path from KFMHS-knowledge to PBC is significant and explains PBC in a positive way (β = .29, p < .01) while controlling for background and CBMHP-cultural beliefs variables. This is the only path that has a positive coefficient and is the second strongest path among the main six paths. This finding indicates that the more a participant held KFMHS-knowledge the higher the PBC (meaning higher perceived self-efficacy) toward seeking formal mental health services if needed. This result fits with the larger body of research on Muslim mental health because almost all of the researchers consistently reported the importance of Muslims having KFMHS-knowledge and how that affects their approach toward mental health services (e.g., Ciftci et al., 2013; Cook-Masaud & Wiggins, 2011; Tanhan & Strack, 2020; Tanhan & Young, 2021). However, as we explained in the previous section in detail, none of the researchers empirically measured Muslims' PBC and its relationship with other constructs. The researchers mentioned it indirectly, which makes it difficult to compare and place the current results. The researchers (e.g., Cook-Masaud & Wiggins, 2011; Kelly et al., 1996; Khan, 2006; Tanhan & Young, 2021) in Muslim mental health literature explained how some Muslims, especially Muslim women, might have a favorable approach toward seeking the services but could not due to different reasons (e.g., lack of transportation, lack of mental health providers with competency). Therefore, this positive relationship between these two constructs and the overall high mean of the participants for the PBC construct should be interpreted cautiously. Another important point to consider is that the current study is the first empirical and quantitative study examining Muslims PBC; therefore, more studies are needed for further understanding.

The positive relationship between the two constructs fits SEM as most of the researchers in the Muslim mental health stressed this perspective (Tanhan & Young, 2021). From the TPB/TRA perspective, knowledge about a subject (in this case about mental health issues, services, and treatments) in general is not a significant factor; however, its importance is magnified when the topic of interest is new to the participants. From the TPB/TRA perspective, knowledge affects other main factors (e.g., PBC) indirectly as a background through beliefs. Based on the literature and the current results, it is important to know that the KFMHS-knowledge construct in this study is partially measuring the participants' knowledge about available resources (e.g., mental health clinics, providers, services) in their environment and such variables are called more directly as *actual control* in TPB/TRA and directly affects PBC level. Therefore, the positive relationship between KFMHS-knowledge and PBC is understandable from the TPB/TRA perspective.

From a theoretical lens perspective, the result is understandable from both the TPB/TRA and SEM perspective. From both theories'/models' perspectives, and especially when the topic of interest is new or unfamiliar to the participants, a high level of knowledge is more likely to have a positive relationship with one's high PBC level. In addition, it is important to consider that an important amount of variance in the three dependent variables (R-squares= .36, .13, and .28 respectively for attitudes, stigma, and PBC) was explained by the independent variables (cultural beliefs, knowledge, and the four background variables) combined. Therefore, further research and interpretation might be worthwhile.

LIMITATIONS

There are several limitations regarding the current study. We collected data from adult Muslims in the Southeastern U.S., and the sampling method was convenience sampling. This restricts the generalization of the result. In addition, most of the participants were from only one mid-sized city in the area. We delivered the survey through Muslim organizations in the area (e.g., mosques, RAM, MSA), which restricts generalizability of the findings to other populations.

A second limitation is related to confidentiality and social desirability. The survey was delivered online and paper-based. Despite the assurance, as much as possible and as reported to IRB concerning confidentiality of responses and participants, participants may have acted in some ways (e.g., even though they did not want to participate yet ended up with participating, knowing the first researcher was a counselor and so might have responded differently) to satisfy the researchers and Muslim community leaders since most of the community was familiar with the researchers and the leaders. A third limitation is related to time (e.g., historical and contextual time/place, time period to complete). The survey was sent out about when a ban on seven countries, known as *Muslim ban*, was discussed and executed. This might have prevented some Muslims from those specific countries from participating due to them thinking they were being profiled, which is a common threat to Muslims. In addition, we used the responses submitted within the first 14 days for this study.

The fourth limitation is that there were more males than females who participated, mainly due to the study being delivered at the mosques (where the Muslim man has the obligation to go and the Muslim woman has the option to go) and the key people (e.g., the researchers themselves and the Muslim community leaders) who delivered the study were male. The next limitation is about the psychometric features of the instruments utilized in the current study. First and foremost, we slightly modified all the five instruments to make them more appropriate for the Muslim participants in this study; however, we did not examine the psychometric features of the scales afterward due to the small number of participants in our pilot study. We also provided some limitations of the scales in the result section. In the following paragraphs, we provided some limitations for each instrument.

Aloud (2010) developed and used the first instrument (CBMHP-cultural beliefs) for Arab-Muslims in Columbus, OH. We are the first researchers who slightly modified the instrument and used it for any Muslims living in the Southeastern U.S. Therefore, this modified and/or original instrument needs to be used in more empirical research to examine its psychometric features because in this current study the Cronbach's alpha for the instrument was in the low range (α = .65). This is one of the main limitations of the current study; therefore, the results should be interpreted with that in mind. We also slightly modified the last three instruments, and this is the first study in which the three scales are being used with Muslims. They were originally not normed for Muslims. Though the Cronbach's alphas for each of them improved, the overall alpha for the three dropped a few points; therefore, more empirical studies are needed to determine the psychometric features of the instruments with different and larger samples of Muslims.

The next limitation that might be related to the previous limitation is the low number of participants. As explained in previous sections, it would have been much more effective if we had 20 or at least 10 participants

per parameter, and not just going with the acceptable number of 200 participants as Kline (2016) suggested. Having 20 or at least 10 participants per parameter and a more diverse representative of Muslim participants could have helped with higher Cronbach's alpha for all scales and especially for the CBMHP-cultural beliefs scale, which produced a low alpha level. The higher number of participants could also have helped with running significance tests across the background variables for each of the five main constructs for the first research question. Future researchers can consider these points for their studies and when they consider the implications we have provided at the end of the paper following the conclusion section.

CONCLUSION

Our main purpose was to understand how Muslims in the Southeastern U.S. approach mental health issues and seek formal mental health services. We aimed to partially test (examine) the proposed contextual theoretical framework to answer the seven research questions. In total 209 participants' responses were used for statistical analyses. We found that the participants had a slightly high moderate/favorable levels/scores (observed M= 25.19 over the highest possible score of 44) on CBMHP-cultural beliefs, KFMHS-knowledge (M= 18.67 over the highest possible score of 33) , and PBC (observed M= 20.23 over the highest possible score of 32) constructs, a moderate/favorable level/score on ATFMHS-attitudes (observed M= 16.86 over the highest possible score of 32) construct, and slightly lower under-moderate level for PSTSFMHS-stigma (observed M= 15.36 over the highest possible score of 32) construct, meaning slightly strong stigma.

For all these constructs, the higher scores mean the more favorable approach meaning favorable attitudes, less stigma, and higher PBC. All these results indicate the participants did not strongly/extremely favor or disfavor the five constructs meaning approach toward mental health issues and seeking formal mental health services. In addition to these, the participants strongly aligned with the contemporary medical/scientific explanation of mental health issues and their causes and treatments through their responses to the three items in CBMHP-cultural beliefs construct.

All paths (relationships) for research questions from two to seven were significant, except for research question six path coefficients from CBMHP-cultural beliefs for the each of the other three endogenous variables (ATFMHS-attitudes, PSTSFMHS-stigma, and PBC) were negative and fit with the majority of the larger body of literature on Muslims and mental health. That indicates the stronger a Muslim participant holds CBMHP-cultural beliefs, the less likely they will have a favorable approach toward seeking mental health services. The path coefficient from KFMHS-knowledge to ATFMHS-attitudes was negative, which does not fit with the larger body of research and requires more in-depth study. This can be interpreted as the more a Muslim participant had KFMHS-knowledge, the less favorable ATFMHS-attitudes they had. The path from KFMHS-knowledge to PSTSFMHS-stigma was not significant, which means there was not a positive or negative relationship between these constructs. This finding also does not fit the larger body of research because it is expected that the more one has KFMHS-knowledge the less PSTSFMHS-stigma they have. The last path from KFMHS-knowledge to PBC was positive, meaning the more one has knowledge about mental health issues and services the more likely they have a high PBC (perceived self-

efficacy) to seek formal mental health services. In addition to these, we provided the limitations above and recommendations in the next section for more effective and grounded research and services.

RECOMMENDATIONS

We have presented some contextually and structurally effective implications for researchers, mental health providers, educators, and social advocates.

Implications for Future Researchers

One of the main implications can be researchers improving the constructs and scales if needed and testing the whole proposed theoretical framework (model) with larger samples. Researchers can include some new constructs based on the framework, the concept map, and using some other well-grounded theories and/or theoretical frameworks. In this way, the research and practice in Muslim mental health literature will be more organized and systematical, which is more likely to lead more contextual, effective, and evidence-based practices.

A second implication can be improving our scales and comparing different versions of the scales to improve more culturally appropriate scales that have good psychometric features (e.g., good validity and reliability) because there is a lack of such instruments. We closed some important gaps by modifying and empirically using the five instruments. In future research, it will be important to check the factor analysis for the first two constructs since no one has checked for this one. A third implication, researchers in overall and especially Muslim mental health discipline can pay attention to more use of SEM, TPB/TRA, and other similar theories, from other disciplines that mental health providers are not well-aware to improve more grounded research.

A fourth implication, that is missing greatly, researchers can design experimental studies after providing some mental health services such as interventions (e.g., psychoeducation, individual or group mental health services, and/or community projects) to examine how participants' scores change on constructs. For example, providing psychoeducation about the KFMHS-knowledge construct to provide accurate information and then examining the scores for the construct and/or its relationship with other constructs could be done, since in this current study there were two paths that did not fit with the larger body of research.

Another very needed implication is conducting qualitative or mixed method studies to understand each construct of the proposed theoretical framework, especially the first five constructs. For example, researchers can use *Online Photovoice (OPV) methodology and/or Online Interpretative Phenomenological Analysis (OIPA)* that are quite effective, therapeutic, innovative, comprehensive, participants' perspective protective, and finally contextually and structurally sensitive (Tanhan, 2020; Tanhan & Strack, 2020). Tanhan and Strack (2020) developed *OPV and OIPA* and Tanhan (2020) provided more details on how to use them together or separately in different disciplines (e.g., psychology, medicine, education, public health) and topics.

Many researchers utilized OPV and/or OIPA to understand different topics including mental health (Tanhan & Strack, 2020), COVID-19's effect on mental health (Tanhan, 2020; Tanhan et al., 2021a, 2021b), close relationships (Genc et al., 2021), special education (Öğülmüş et al., 2021), online or distance education (Doyumğaç et al., 2021; Subasi et al., 2021; Tümkaya et al., 2021), and women's perception of sexuality (Ozkan, 2021). Based on such more effective and innovative qualitative approaches, looking at knowledge, attitudes, and PBC toward mental health services might lead to some worthwhile empirical studies because we had some research findings that contradict with the larger literature. This might be important because as we explained, participants' knowledge was negatively related with attitudes, and the participants who had utilized mental health services had a mean score of 16.05 for PBC while the ones who had not utilized the services had a mean score of 22.62 for PBC. Therefore, understanding these constructs through OPV and/or OIPA from the participants own perspective without giving them any previously structured questions may meet important needs to further understand this population.

A final implication is testing the framework both for the Muslims and others to understand people's approach to mental health issues and services during and following the COVID-19 pandemic. Exploring people's approach to online and face-to-face mental health issues and or services through the framework can contribute to the related literature significantly. Related to that, using the framework to understand people's approach to the pandemic itself and strategies to stay protected (e.g., using face masks, staying away from social life, getting vaccinated) can add significant value to research and practical life, as people face many difficulties (e.g., fatigue, burnout, depression; Tanhan, 2020).

Implications for Mental Health Providers

Mental health providers are key people to address psychosocial issues and/or to increase the quality/wellness of life at all levels of life (e.g., individual including intrapersonal and interpersonal, group, community, exosystem, and macrosystem levels) from an SEM perspective. Therefore, based on the findings of the current research, mental health providers (e.g., counselors) can provide various services to accompany Muslims while addressing their psychosocial issues.

The first practice can be mental health providers paying attention to considering intrapersonal theories (e.g., TPB/TRA) with larger system theories/models (e.g., SEM) while attending the people to understand and accompany them in addressing their biopsychosocial issues and/or to enhance their quality of life. It is very common to see mental health providers who fail to consider the larger context/systems people, and especially Muslims, live within and just stressing intrapersonal processes/factors. Therefore, as the proposed contextual framework (model) proposes, a broadened perspective that is based on intrapersonal and larger/system level will be crucial for an effective service; otherwise, it is more likely that mental health providers disserve and blame the victims, as the researchers explained. For example, it might be important for mental health providers to not just collaborate and address biopsychosocial issues at the individual level (e.g., individual sessions), but also

collaborate with the community for projects (also known as community psychology or counseling) to identify, assess, and advocate for the issues on larger levels (e.g., institution, local, and government).

The second implication for mental health providers is paying special attention to understand the five main constructs examined in this study, meaning what each of them means to Muslims and how they scored on them. Additionally, considering background variables and their interactions is important. For example, many mental health providers are not aware of CBMHP-cultural beliefs at all, when in this current and many other studies Muslims hold these beliefs from a moderate to a strong level. Understanding these beliefs and incorporating them in the process of providing mental health services is crucial as all the researchers, without exception, stressed this construct and its role in Muslims' lives and the process of getting mental health services. Therefore, a more accurate and deep understanding of these five constructs (what they mean to Muslims), their interaction/relationship, and then their integration to the process of providing service is another implication.

The next implication, more specifically than others, is paying attention to Muslims' level of PBC (perceived self-efficacy) toward seeking mental health services, because high PBC does not mean that Muslims will eventually utilize the services. Therefore, a more contextual and deep understanding of this construct is crucial. Another important implication is mental health providers paying attention to a more inclusive language while interacting with Muslims in terms of providing information, practices, and events that introduce mental health services and providers, not just when one has serious issues (psychopathology) that prevents him or her from functioning in life, but also for enhancing the wellness/quality of life. As the researchers and findings in this study show, Muslims are more likely to identify mental health providers from a medical/psychopathology perspective, which leads them to resort to the services as the last option after they have tried other things which have not given them hope and could be a waste of time, money, and most importantly, life.

Another important implication is that other key people/professions (e.g., imams, spiritual leaders, primary health physicians) who do not directly fall in line as a mental health provider also could benefit from these results if they integrate them because the participants did not hold very strong CBMHP-cultural beliefs, as their scores on three items (one, two, and six) in the scale showed that the participants strongly align with explaining mental health issues, their causes, and treatments from a contemporary medical/scientific perspective. Therefore, the professionals and key people who are non-mental health providers might find considering these results helpful while providing services to Muslims. As a final and comprehensive implication, considering the contextual and complex interaction of main constructs and background variables, more attention could be paid to cultural, spiritual/religious, and structural interventions to provide more effective services and to do so collaborating with other health providers (e.g., physicians, social workers) and key people in the Muslim community (e.g., imam, spiritual leaders).

Implications for Educators and Especially Mental Health Educators

Mental health educators, as gatekeepers, are crucial for affecting what the counselors-in-training learn, search, and improve mental health approaches, interventions, and how to approach issues after gaining all the knowledge/content (Fickling et al., 2017; Tanhan, 2018). Many researchers invited the key people (professors) in education to be more cautious about their pedagogy while teaching how to address biopsychosocial and spiritual issues (e.g., Holmes, 2013; Tanhan et al., 2021; Tanhan & Young, 2021). Therefore, the current findings will be helpful to mental health educators as well. More specific implications are presented in the following paragraphs.

The first implication is embracing the TPB/TRA and SEM perspectives in teaching. Most of the researchers in the Muslim mental health research body called for evidence-based interventions. They especially called for considering a contextual and comprehensive perspective, which means SEM, while conducting research and providing services to Muslims. A few other researches from Muslim mental health and larger counseling literature also stressed and called for utilizing TPB or TRA, as they are called TPB/TRA in this study, in teaching and practice. Therefore, mental health providers, in getting more familiar with these models separately or together and integrating the models and its perspective in their teaching, will be important.

The second implication is integrating more information about Muslims' approach toward mental health issues (e.g., vignettes) in the teaching process so that the trainees can be more familiar with the concepts. For example, trainers could bring some speakers (e.g., an imam, key person from community) to share their struggles and issues at any level (intrapersonal, interpersonal, community, or macrosystem) and how they see these issues. In this way, it might be possible to see how they see and conceptualize their biopsychosocial spiritual and economic issues. Additionally, the trainers can ask some questions to understand how Muslims cope with their issues and ask if they can share how their spiritual/religious aspect affects them in this struggle. A second example will be for the trainers to call a scholar of Islam who is familiar with the nine aspects of self (since not all but many Muslims use them, whether consciously or unconsciously) and the journey among them might be used to conceptualize mental issues/struggles and healing. Another example would be for trainers to find a passage, video, or again, a guest to understand and discuss what kinds of daily rituals (e.g., daily prayers, remembrance of Allah) Muslims do to manage their stress/mental health issues as Tanhan (2019) explained in details from an Acceptance and Commitment Therapy (ACT) and SEM perspectives.

A third implication could be for the trainers to collaborate with key people in the Muslim community and organize tours to the settings (e.g., mosques, Muslim cultural centers, Islamic schools, and/or Muslim events) where Muslims gather so that trainees get more familiar with the contexts of Muslims rather than developing an acontextual picture. In addition, the trainers can invite guest speakers or organize some events at their schools/institutions and be intentional to include/invite Muslims. In this way, the trainees can get a more contextual perspective about Muslims and their approach to mental health issues and formal mental health services.

Implications for Social Advocates

Anyone interested in this topic including mental health researchers, service providers, educators, and community leaders can use the results to advocate for all others. These advocates can pay utmost attention to key people (e.g., administrators, representatives, leaders) to get to know Muslims' approach to mental health services. In this way, it can be much more effective to enhance overall wellbeing and address biopsychosocial spiritual and economic issues of Muslims starting from an individual level to a macro level as SEM suggests. And such a dynamic and well-grounded advocacy and support can benefit all starting with the Muslims, the ones in touch with them, and gradually all human tribe. We live in a global world where issues or energy of one community or even one person gradually affects all others; therefore, systemic and dynamic advocacy is much more needed than any other time in human history.

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ETHICAL TEXT

We have followed the journal's writing, publishing, research, and publishing ethics principles. We followed the journal's ethics. The University of North Carolina at Greensboro (UNC Greensboro) Institutional Review Board (IRB) approved all the procedure for the dissertation. IRB number for this approval is 16-0341 and Reference number for the IRB is 105688. *UNC Greensboro approved the study on October 13th 2016 and allowed the study to be conducted from October 13th 2016 till December 12th 2017.* UNCG IRB stamped all the consent form pages and we have written this paper based on this process and part of the completed and published first author's dissertation (Tanhan, 2017). All the IRB and all the documents (e.g., original or adapted scales) are available in the dissertation appendixes. We accept that as the authors, we are responsible for any unethical issues that may arise related to this paper.

Author(s) Contribution Rate:

The first author's contribution rate is 80% and the second author's contribution is 20%. AS the authors, we do not have any conflicts for this paper and our contribution rate. We have ordered the names based on contribution to and preparation of the manuscript. The authors agreed on the order and on all other processes

related to the submission of the manuscript and declare no conflicts of interest. The manuscript has not been published or sent for publication elsewhere.

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