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Development and Validation of the Knowledge, Attitudes, and Practice Purification ('Tahara') Questionnaire among Jordanian Muslims

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Abstract
This study aimed to assess the validity of the Knowledge, Attitudes, and Practice questionnaire on purity among Muslims. Purity is a religious requirement that must be met for most acts of worship to be accepted. To develop the questionnaire, it was administered to a sample of 7 reviewers and 290 participants. The procedures consisted of two stages. The first stage was to build the tool's items from previous literature. The second stage was to judge the tool through content validity. Three equations were used: the content validity ratio, scale-level content validity index, and item-level content validity index, in addition to exploratory factor analysis (EFA) and reliability via test-retest and internal consistency. The results of the first stage showed that the questionnaire in its initial form consisted of 3 factors with a total of 81 items. After applying the content validity equations, it became clear that 17 items had a percentage of less than 99%, so they were deleted, and the number of items became 64. When EFA was conducted, 15 items were deleted, and the loading level was less than 0.4; thus, 49 questionnaire items were distributed across the three factors: practice (n=15), attitudes (n=18), and knowledge (n=16). The study concluded that the KAP questionnaire can be applied to Muslims' purity as a religious belief in maintaining public health, along with a religious requirement.

INTRODUCTION

Purity is one of the greatest values brought by Islam. It is closely linked to faith and a condition for the validity of acts of worship, especially prayer. It is a supreme value and a fundamental practice in the life of a Muslim (Al-Shanti & Abu Wahdan, 2018). It is not merely a physical state of cleanliness but rather an integrated system of rulings and practices aimed at preserving the purity of the body and the clarity of the soul (Aycan, 2024). Purity is not merely physical cleanliness and involves removing dirt and impurities. Rather, it is a comprehensive concept that combines physical and spiritual purity, shaping the Muslim character with a pure heart, body, and behavior (Almanasreh et al., 2019).

The concept of purity in Islamic jurisprudence is grounded in a devotional and legal framework aimed at achieving both physical and spiritual cleanliness in preparation for worship. It is based on the Qur'an, the Prophetic Sunnah, and scholarly consensus (Al-Zuhayli, 2007). Purity is classified into purification from ritual impurity (such as ablution and ritual bathing) and purification from physical impurity (the removal of filth). The principle of removing hardship and facilitating ease is observed, for example through dry ablution (*tayammum*) when water is unavailable or cannot be used. Practical application is reflected in a Muslim's daily adherence to the rules of purity as a prerequisite for the validity of prayer and other acts of worship (Kamali, 2003).

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The Holy Qur'an and the Sunnah of the Prophet have given purity a special status, making ablution, ritual bathing, and dry ablution (*Tayammum*) pillars of preparation for worship and emphasizing the avoidance of impurities on the body, clothing, and place (Ahaddour et al., 2017). Islam also calls for caring for the body and general appearance, making this a perfect part of sound nature (Al-Ghamdi et al., 2014). Throughout history, Muslims have been deeply aware of the importance of purity. They built mosques with ablution facilities and considered teaching children about the rules of purity to be one of the first things taught to them in schools and "*Kuttabs*."

The practice of purity transcended by being a religious ritual to become a deeply rooted daily habit, reflecting public health and personal hygiene. This made Islamic societies more aware of cleanliness during periods when the world was suffering from poor hygiene practices (Al-Shanti & Abu Wahdan, 2018). Manifestations of purity include removing excess hair from specific areas to reduce unpleasant odors resulting from bacterial activity in sweat and performing tayammum (dry ablution) using clean earth when water is unavailable or unavailable. Washing after sexual impurity (*Janabah*), menstruation, or postpartum bleeding is not limited to ritual purity; it also contributes to preventing the proliferation of bacteria and germs and maintaining skin balance (Alawi, 2022). Regular hygiene increases feelings of psychological comfort and reassurance, which is consistent with recent studies confirming that showering and washing the face with cold water reduces stress and enhances a positive mood (Almajri et al., 2022).

The Holy Quran has linked purity with Allah's pleasure, as He says: Indeed, Allah loves those who are constantly repentant and loves those who purify themselves [Al-Baqarah: 222], indicating that purity is an act of worship beloved by Allah and a manifestation of closeness to Him. Purity is divided into two types: Spiritual purity, which is the purification of the heart from polytheism, sins, and transgressions, and the purification of the soul from reprehensible morals such as arrogance, envy, and hatred. It is the basis for the acceptance of deeds by Allah. Physical purity refers to the removal of impurities and minor or major ritual impurities. It includes ablution, full ablution, and dry ablution, in addition to maintaining the cleanliness of the body, clothing, and place. Purity has certain conditions, some of which we mention, for instance, pure water, full ablution after sexual impurity, and the order in which one performs full ablution (Al-Azmi & Mansour, 2006).

Purity is not limited to the Islamic religion. In Jewish law, the concept of purity combines ritual and practical aspects. There are many types of impurities, such as contact with corpses, bodily fluids, and unclean animals. Jewish law imposes a comprehensive system for purification from these impurities, the most important of which is bathing in a mikveh (Regev, 2000). Purity is considered a tool for protecting the identity of Jewish society, as the boundaries between clean and unclean people serve to reinforce cultural and religious distinctions. This was reflected in dietary laws (kashrut) and in the view of women during menstruation and postpartum bleeding (Olyan, 2004). Purity is not limited to the physical aspect; it is also linked to holiness and a sense of belonging to God. Researchers have emphasized that purity rituals aim to connect the body to the sacred (Lemos, 2013).

With respect to purity in Christianity, Jesus Christ redefined the concept of purity. The transition from physical purity associated with food and bathing to purity of the heart is associated with morality (Dunn, 2002). Baptism has become the cornerstone of Christian purity. It is a ritual symbolizing purification from original sin and spiritual rebirth. Baptism has been considered a developed continuation of the Jewish ritual of bathing (Kazen, 2024). In addition to baptism, Christianity emphasizes ongoing repentance and confession of sins as a permanent means of inner purity. Christian purity transcends ritual to encompass daily moral life (Thiessen, 2021). Purity in Judaism took on a ritual and practical dimension rooted in collective identity and ritual laws, whereas Christianity focused on the spiritual and moral dimension, transforming rituals into symbols of rebirth in Christ. Thus, the concept of purity has shifted

from form to content and from external ritual to the purity of the heart (Dunn, 2002; Kazen, 2024; Regev, 2000). Table 1 compares purity in the three heavenly religions: Judaism, Christianity, and Islam.

Table 1 Comparison of Purity in Islam, Judaism, and Christianity

Aspect	Judaism	Christianity	Islam
Doctrinal Basis	Purity is part of the *Halakhah* (Jewish law) and is strongly linked to worship and religious identity.	Purity is more spiritual and moral than material, associated with repentance and purification through baptism.	Purity is a prerequisite for the validity of worship (prayer, circumambulation, touching the Qur'an).
Physical Purity	*Mikveh* (ritual immersion), washing hands before meals and prayers.	Washing hands in certain rituals, baptism as a symbol of spiritual purification.	Ablution (*wudu*), ritual shower (*ghusl*), removal of impurities, use of the miswak.
Spiritual Purity	*Teshuvah* (repentance), reading the Torah, prayer.	Salvation from original sin, repentance, and confession.	Purity of the heart, repentance, remembrance of God (*dhikr*).
Practices and Symbols	The mikveh as a symbol of renewal and purification.	Water in baptism as a symbol of spiritual renewal.	Purifying water, dry ablution (*tayammum*) with clean soil when water is unavailable.
Moral and Social Dimension	Purity is linked to religious identity and ritual belonging.	Purity is connected with divine love and moral conduct.	Purity is a condition for social and ritual acceptance (mosque attendance, transactions).

Note. General similarities: all emphasize the connection between purity and worship. Water is a central element of purification in all three religions. Purity has a spiritual and moral dimension that transcends the physical.

Given the health, religious and spiritual importance of purity in the Islamic religion, the goal of this research was to verify the psychometric properties of the purity questionnaire for Muslims in terms of their knowledge, attitudes and practices. The problem of this study emerged from the lack of studies on this topic as a tool with reliable psychometric properties and the scarcity of experimental or descriptive studies around the world. However, there are many master's and doctoral theses on the topic of purity in the Arabic language, exceeding 245 theses. Their titles varied from the obligations of purity (Tayeb & Al-Halis, 1989) and its dislikes (Al-Shanti & Abu Wahdan, 2018) and their jurisprudential developments (Al-Azmi & Mansour, 2006) and others. They are available in the Arabic database "Dar Almandomah," but they discuss only legal, religious and historical topics.

In this context, the purity questionnaire in the Islamic religion was built from the perspective of health in general. A small number of these studies emphasize the issue of purity in Islam and its relationship to public health; we mention the study conducted by the World Health Organization (Allegranzi et al., 2009), which includes guidelines for handwashing and purity for health care. The results revealed that the practices performed by Muslims in ablution and prayers of general purity, such as washing hands and exposed areas, greatly help protect against diseases, maintain public health, and prevent infectious diseases.

Another study revealed that Muslims' adherence to Islamic ritual purity, such as handwashing, ablution, and regular bathing, effectively contributes to the prevention of infectious diseases and the maintenance of public health (WHO, 2009). Another study, "Skin Care: Historical and Contemporary Perspectives," showed that skin care, from an Islamic perspective, as a requirement for purity and health care, helps reduce the incidence of infection, that bathing after intercourse protects spouses from the transmission of infectious diseases, and that repeated daily ablution maintains physical care and disease prevention (Al-Ghamdi et al., 2014). Purity is not limited to acts of worship during one's lifetime; it also includes purification

upon death, which involves being washed according to Islamic teachings, preparing oneself for the afterlife and meeting God. These customs involve purifying the soul and body (Ahaddour et al., 2017).

A study comparing the effectiveness of nasal water inhalation during ablation (Ramli et al., 2018) revealed that nasal water inhalation significantly reduced symptoms of cough, runny nose, and nasal congestion. The control group had a greater number of visits to healthcare facilities for treatment than did the intervention group. Another study, "the impact of hand sanitization as a religious requirement on workers' health and religious beliefs in the United Arab Emirates," showed that members of the experimental group who held religious beliefs as a requirement for purity and as an introduction to prayer were more attentive to their physical health and hygiene than the control group who did not believe in purity (Ng et al., 2019). A different study, "the cultural and religious dimensions of hand hygiene and health care as religious beliefs of purity," (Shaikh, 2020), combined data from numerous relevant journals, articles, and studies and concluded that there are no studies that sufficiently support scientific evidence for religious practices in maintaining hand hygiene in healthcare settings.

On the other hand, Sobhani et al. (2022) conducted another study titled "physiological and hormonal changes due to Muslim prayer and their effect on reducing psychological stress." The study revealed an increase in alpha radiation and the worshipper's ability to concentrate and that ablution and hand washing effectively reduced psychological stress among worshippers. Purification rituals, such as ablution, are an essential part of the Islamic religion. The results of a study titled "cleanliness, ablution, and their relationship to purity" revealed a reciprocal relationship between religiosity and cleanliness, with each supporting and strengthening the other (Preston & Ritter, 2012). Finally, there is a study titled "skin diseases associated with prayer in Muslims," as ablution is an essential part of prayer acceptance. The results showed that friction resulting from prostration, the application of perfume before prayer, and ablution in communal areas may contribute to some allergic skin diseases resulting from prostrating in the same place (Salem et al., 2024).

Knowledge, attitudes, and practices (KAPs) improve Muslims' awareness of purity, and it is appropriate to develop this questionnaire on a sample of adult Muslims, as no tool on the same topic as this research has yet been published in accredited scientific journals. Accordingly, this study aimed to develop and validate a measure of Muslims' KAP of the concept of purity. We believe that its outcomes will help researchers increase their awareness of the concept of purity, refute errors, correct misunderstandings, improve their practices and behaviors and that it can be used as both a diagnostic tool and a therapeutic tool (Andrade et al., 2020; AshaRani et al., 2020).

METHODS

The study sample was recruited from all Jordanian Muslims, males and females, whose ages ranged between 18 and 70 years. The study tool included the demographic variables and the necessary instructions for completing the questionnaire. The participants were informed that answering the link is voluntary and for scientific research purposes only and that the identity of the participant will not be revealed and that he has absolute freedom to accept or reject, in line with the instructions of the Scientific Research Committee at the college and the ethics of scientific research in the American Psychological Association, noting that the link was sent via social media sites, especially Facebook and Instagram, which are the most popular in Jordan, in addition to WhatsApp groups. It should be noted that participation in the survey was entirely voluntary, allowing respondents to choose whether or not to complete the questionnaire, thereby ensuring the validity of the responses and respecting participants' autonomy.

The questionnaire was also sent for a fee of $500 to the social websites account holders with more than 200,000 followers. To increase the sample size, all targeted participants were asked to forward the link to their groups. The sampling strategy is a non-probability

convenience snowball sampling. The questionnaire was constructed and validated in two stages. The first stage was used to develop the instrument, whereas the second stage was used to evaluate the questionnaire through content and construct validity calculations, expert panel reports, and SPSS version 26 for reliability testing.

Stage One: Instrument development

After the study objectives were verified, the items were presented to seven experts holding doctorates in Islamic sciences to evaluate the study instrument. This was preceded by a review of previous literature on the topic, including foreign and Arab databases. Variable, diverse, and renewable keywords were used to access the largest possible number of relevant studies. Therefore, no Arab or foreign studies were found under this title, whereas all Arab studies focused solely on the subject of purity from a legal and doctrinal perspective. Arabic religious references were used to generate the instrument's items in terms of knowledge, attitudes, and practices. These items were presented to the experts to evaluate their linguistic integrity and suitability in the second stage, where they evaluated the items and verified their apparent validity.

Stage Two: Content Validity and Questionnaire Evaluation

Content validity assessment plays a fundamental role in the evaluation of an instrument. This assessment is usually conducted by a group of experts to provide important information and feedback on the instrument's construction, the clarity of the items, and the representativeness of each item of the newly developed instrument (Almanasreh et al., 2019). In general, it is recommended that at least five experts be involved in the evaluation and review of the instrument. These experts should be scientifically qualified and specialized in this field to determine the level of agreement between them and to evaluate the items in general (Zamanzadeh et al., 2015). Accordingly, the content validity of this study was achieved by seven experts specializing in Islamic law. The experts were asked to use quantitative methods to evaluate content validity. The cover letter sent to the experts included the study objectives, content, and scoring method. This was done via WhatsApp. Each item was evaluated for clarity and representativeness. The experts were given freedom, instructions, and sufficient time to evaluate the items without interference or communication between the experts themselves. The evaluation of the questionnaire items was completed independently. Notably, three equations were used: the content validity ratio (CVR), scale-level content validity index (S-CVI/Ave) and item-level content validity index (I-CVI). These equations are intended to verify the content validity of this questionnaire (Cao et al., 2024).

CVR, which was first used by Lawshe (1975), has been widely used to assess content validity. It is a method for checking whether items are necessary and relevant to the instrument. In the first stage of evaluation, experts must divide each item into three levels to judge its validity and suitability for the instrument. These levels include unnecessary, useful but unnecessary, and necessary, with numbers ranging from 1 to 3 points. The equation used to check the percentage of content validity is CVR = (ne - N/2)/(N/2), where ne represents the number of experts who decide that the item is necessary and where the symbol N refers to the total number of evaluators in the group. Therefore, the value is calculated through the equation that ranges from +1to -1. Since the number of members of the arbitration group in this study is 7, the minimum value for acceptance according to Lawshe's recommendation for the CVR is 0.99.

CVI is widely used statistical method aimed at assessing the content validity of a questionnaire (Shi et al., 2012) and is divided into the S-CVI and the I-VCI. In the second stage of evaluation, the experts were asked to rate the questionnaire items in terms of the clarity and representativeness of the tool on a four-point Likert scale (1 = not relevant and unclear, 2 = item needs some basic modifications, 3 = item is clear and relevant to the tool but needs minor

modifications, 4 = item is clear and representative). After that, the I-CVI was calculated according to the equation (number of experts who rated item 3 or 4/number of experts). For this study, acceptance will be at an I-CVI value of 0.79. If the I-CVI value is between 0.7 and less than 0.79, the item is modified. If the item value is less than 0.7, it will be deleted (Rodrigues et al., 2017). In addition, S-CVI/Ave was calculated on the basis of the I-CVI. The equation is calculated as follows: (Total I-CVI scores)/ (Number of items) (Cao et al., 2024).

Test-retest reliability

Test–retest reliability after a 2-week period was used to verify the stability and sustainability of the questionnaire over time. Previous studies have confirmed that a period of one to four weeks is sufficient to verify test–retest reliability (Kurpius & Stafford, 2016). On the other hand, a short period of time may allow participants to recall their previous answers. Conversely, a long period of time may lead to new life developments and unexpected events that affect the validity of the participants' answers. Therefore, the appropriate period to measure test-retest reliability is approximately two weeks (Abdulkader Mohamed et al., 2022). After the participants completed the first test, the questionnaire was readministered via the same methods and techniques as those used in the first test. On the other hand, the interclass correlation coefficient (ICC) equation was calculated to verify the test-retest reliability of the questionnaire. An ICC value of less than 0.5 indicates weak reliability, whereas a value between 0.5 and 0.75 indicates average reliability, and a value between 0.75 and 0.90 indicates good reliability. Finally, a value greater than 0.90 represents excellent reliability (Koo & Li, 2016). Note that the sample size should not be less than 100 participants to achieve reliable results (Kennedy, 2022), which is what was adopted in this study.

Structural Validity

The validity of the questionnaire's structure was verified through exploratory factor analysis (EFA). The appropriate sample size for factor analysis was first verified via the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.80, indicating that the data were suitable for factor analysis (Dziuban & Shirkey, 1974). According to Bryman and Cramer (2002), the sample size calculation of construct validity (factor analysis) is based on the number of items in the instrument with a subject-to variable ratio of 4:1. Therefore, the required sample size for 64 items is 256.

Internal consistency

The internal consistency of the study questionnaire was tested via Cronbach's α, with a value above 0.70 considered acceptable. To calculate the internal consistency value of the study questionnaire, an α value of 0.5, a power of 0.80, and an internal consistency value of 0.70, K = 2, were used. All analyses were conducted via SPSS version 26 on a sample of 290 individuals.

RESULTS

Results of the Stage 1

The study tool, in its initial form, consisted of four parts, including demographic variables and three pre-arbitration questionnaire factors (81 items for the three factors of knowledge, attitudes, and practice and six items for demographic variables). The first part consisted of six questions related to the participants' demographic information, whereas the second part consisted of 23 dichotomous questions requiring a false or true answer to verify general knowledge about the concept of purity. The third part consisted of 30 questions centered on the participants' attitudes toward belief in the concept of purity, answered on a five-point Likert scale from 1 to 5 (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree).

The fourth part consisted of 28 items related to the extent of the participants' practice purity on a five-point scale from 1 to 5 (always, often, sometimes, rarely, never). The practice factor focused on purity in worship, prayer, spiritual aspects, doctrine, ablution, etc. Note that all the items of the second and third factors are positive.

Results of the Stage 2

The study sample consisted of 290 participants who answered the questionnaire, including 187 (64.48%) males and 103 (35.52%) females. Most participants held a bachelor's degree (131, 45.17%), whereas 143 (49.31%) had a monthly income below JD 450. The mean age of the participants was 35.29 years (SD = 13.42). All of them were Jordanian. Table 2 shows the demographic characteristics of the participants.

Table 2. Demographic variables of the participants (n=290).

Variables	N (%)
Gender	
Males	187 (64.48%)
Females	103 (35.52%)
Age	
18–36	98 (33.79%)
37–44	111 (38.28%)
45 and Above	81 (27.93%)
Qualification	
Diploma and below	75 (25.86%)
Bachelor	131 (45.17%)
Master and doctorate	84 (28.97%)
Family income (monthly)	
Below 450 JD	143 (49.31%)
450-700 JD	75(25.86%)
700 and above JD	72 (24.83%)
Career	
Public work	122 (42.07%)
Private work	116 (40.00%)
Do not work	52 (17.93%)
Age, Mean (SD)	35.29 (13.42)

Content validity and adaptation

After expert evaluation, a CVR was calculated to test the questionnaire's content validity. At this stage, 4 items were deleted from the knowledge factor because they did not achieve the required CVR of less than 0.99. These items were deleted during the first stage of arbitration (replace ablution if the obligatory parts are fulfilled, ablution is not invalidated by a light sleep, Ablution is invalidated from ablution Wudu' if he fulfills his duties, and dry ablution is permissible when water is available if harm is feared by using it). Six items were also deleted from the attitudes factor (I feel comfortable after washing, I consider cleanliness a condition for social acceptance, I believe that cleanliness should be part of upbringing and family life, I consider environmental cleanliness an extension of the concept of religious purity, I feel that cleanliness strengthens relationships with society, and I believe that cleanliness helps in respecting others). Finally, 7 items were deleted from the practice factor (I perform dry ablution when water is not available, I wash my hands before and after eating, I pay attention to oral hygiene after eating, I wash my face several times a day, I take care of the cleanliness of my utensils food, I do not enter the mosque unless I am pure, I make sure to ventilate the house).

Accordingly, the expert committee approved the content validity of the questionnaire at this stage. All the items were linguistically verified in accordance with the experts' advice and

guidance. Table 3 shows the modified version of the questionnaire on the basis of the results of the first stage of content validity and the experts' recommendations. In a subsequent step, the same experts (n=7) assessed the scores of 64 of the 81 items in the instrument to verify their clarity and suitability for the questionnaire's objectives in the second stage of content validity testing. Accordingly, the CVI and S-CVI/Ave values were calculated, and all the items achieved scores higher than 0.8 on the I-CVI equation. The results were also high according to the S-CVI/Ave (S-CVI/Ave=0.99), which is excellent and appropriate.

Table 3. Modified version of the questionnaire due to the results of the first

n	Item
	Knowledge factor
1	The intention of ablution is a Sunnah and not a condition for its validity (false)
2	The obligatory parts of ablution include washing the face, hands up to the elbows, wiping the head, and washing the feet (correct)
3	Ablution is invalidated by passing wind (correct)
4	A small amount of blood from the nose invalidates ablution by consensus (false)
5	Removing impurity from clothing is a condition for the validity of prayer (correct)
6	Touching the Qur'an requires purity (correct)
7	Semen is impure, and whatever encounters it must be washed (false)
8	Shaving the pubic hair and clipping the nails are condition for the validity of prayer (false)
9	Seawater is pure, and its dead bodies are permissible (correct)
10	Ablution is a condition for the validity of prayer (correct)
11	Tayammum is permissible if water is not available (correct)
12	Shower after menstruation or postpartum bleeding is a condition for purity (correct)
13	Ablution combines the obligatory parts Sunnah (correct)
14	Inhaling water from the nose is a Sunnah of ablution (correct)
15	Washing on Friday is confirmed Sunnah (correct)
16	Whoever forgets a limb during ablution invalidates (correct)
17	Prayer is invalid with impurity on one's clothing (correct)
18	Tayammum removes ritual impurity just like water (correct)
19	Purity is a condition for the acceptance of supplication (false)
	Attitudes factor
1	I consider purity a central faith value in my life.
2	I feel that my commitment to purity brings me closer to God.
3	I believe that purity has an educational impact on character building.
4	I feel psychological comfort after performing ablution or ritual washing.
5	I believe that teaching children the rules of purity should begin early.
6	I respect the different jurisprudential interpretations related to purity.
7	I consider taking care of one's appearance to be part of praiseworthy purity.
8	I believe that purity contributes to improving social relationships.
9	I believe that commitment to purity protects against negative health habits.
10	I feel a responsibility to convey the culture of purity to those around me.
11	I consider spiritual purity (purity of the heart) a priority no less than physical purity.
12	I feel reassured after performing ablution.
13	I consider purity a symbol of spiritual purity.
14	I believe that purity improves general health.
15	I believe that purity reduces diseases
16	I believe that purity is reflected in moral behavior.
17	I consider purity to be a manifestation of Islamic civilization.
18	I believe that purity enhances self-confidence.
19	I consider purity to be an indispensable daily ritual.
20	I feel that purity is reflected in one's overall appearance.
21	I believe that purity is a means of raising children to be disciplined.
22	I believe that purity increases concentration in prayer.
23	I consider purity to be a means of purifying the soul.
24	I believe that purity makes me more committed to worship.
	Practice factor
1	I perform ablution before every obligatory prayer.
2	I arrange the pillars of ablution and ensure continuity.

3	I inhale and exhale during ablution.
4	I perform ablution thoroughly and ensure that water reaches the joints.
5	I renew my ablution for the next prayer, even if it has not been nullified.
6	I take a shower after sex according to Islamic law.
7	I am careful to perform shower for Friday.
8	I remove impurities immediately upon occurrence.
9	I adhere to the rules of tayammum when water is unavailable.
10	I check the purity of my body, clothing, and place before prayer.
11	I use a toothbrush (Siwak) before prayer.
12	I inform those with me at home/work of the basic rules of purity when needed.
13	I am careful to perform ablution before every prayer.
14	I change dirty clothes regularly.
15	I trim my nails regularly.
16	I remove armpit and pubic hair regularly.
17	I keep my place clean during prayer.
18	I use water sparingly without waste.
19	I use hand sanitizer when needed.
20	I pay attention to personal hygiene before bed.
21	I am careful to maintain purity while traveling.

Exploratory factor analysis

The results of the KMO test for the questionnaire were 0.923, and the P value of the Bartlett sphericity test was less than 0.001, indicating that the test sample for each factor in the instrument was appropriate and that the data provided supported the continuation of the EFA. Table 4 shows the results of the KMO and Bartlett sphericity tests. The factors were rotated by varimax rotation to clarify the correspondence between elements and research items.

Table 4 Results of the KMO and Bartlett sphericity tests

Test		Results
KMO		0.923
Bartletts sphericity	Chi-square	4706.629
	Freedom degree	468
	Significance	< 0.001

Table 5 shows that three factors were extracted, and their eigenvalues were statistically significant and greater than 1. The total variance of the three factors contributed a total of 64.32%, distributed as follows: knowledge, 23.08%; attitudes, 21.40%; and practices, 19.84%. The number of factors discovered was in line with the previously assumed expectations, as the EFA did not reveal any items that were shared or overlapped in the factor loading. The loading level for all these factors, as shown in Table 5, was greater than 0.40, with values ranging from 0.523 to 0.883. However, the items that scored less than 0.40 were deleted. There were 4 items from the first factor (the obligatory parts of ablation include washing the face, handing up to the elbows, wiping the head, and washing the feet; removing impurity from clothing is a condition for the validity of the prayer; after menstruation or postpartum bleeding is a condition for purity; seawater is pure, and its dead bodies are permissible), 6 items from the second factor (I consider purity a central faith value in my life; I believe that teaching children the rules of purity should begin early; I believe that commitment to purity protects against negative health habits; I believe that purity is a means of raising children to be disciplined; I feel that purity is reflected in one's overall appearance; I consider purity to be a means of purifying the soul), and 5 items from the third factor (I inhale and exhale during ablution; I renew my ability for the next prayer, even if it has not been nullified; I inform those with me at home/work of the basic rules of purity when needed; I perform ablution thoroughly and ensure that water reaches the joints; I am careful to perform ablution before every prayer). Table 5 shows the results of

loading and commonalities of the EFA in its final version, with 49 items distributed over 3 factors: practice (n=15), attitudes (n=18), and knowledge (n=16).

Table 5. Results of factor loading and commonalities

Item	Knowledge	Attitudes	Practice
The intention of ablution is a Sunnah and not a condition for its validity (false)	0.581		
Ablution is invalidated by passing wind (correct)	0.620		
A small amount of blood from the nose invalidates ablution by consensus (false)	0.590		
Touching the Qur'an requires purity (correct)	0.621		
Semen is impure, and whatever encounters it must be washed (false)	0.692		
Shaving the pubic hair and clipping the nails are condition for the validity of prayer (false)	0.598		
Ablution is a condition for the validity of prayer (correct)	0.764		
Tayammum is permissible if water is not available (correct)	0.680		
Ablution combines the obligatory parts Sunnah (correct)	0.675		
Inhaling water from the nose is a Sunnah of ablution (correct)	0.523		
Washing on Friday is confirmed Sunnah (correct)	0.629		
Whoever forgets a limb during ablution invalidates (correct)	0.755		
Prayer is invalid with impurity on one's clothing (correct)	0.732		
Tayammum removes ritual impurity just like water (correct)	0.632		
Purity is a condition for the acceptance of supplication (false)	0.605		
I feel that my commitment to purity brings me closer to God.		0.652	
I believe that purity has an educational impact on character building.		0.761	
I feel psychological comfort after performing ablution or ritual washing.		0.692	
I respect the different jurisprudential interpretations related to purity.		0.570	
I consider taking care of one's appearance to be part of praiseworthy purity.		0.660	
I believe that purity contributes to improving social relationships.		0.593	
I feel a responsibility to convey the culture of purity to those around me.		0.883	
I consider spiritual purity (purity of the heart) a priority no less than physical purity.		0.610	
I feel reassured after performing ablution.		0.653	
I consider purity a symbol of spiritual purity.		0.539	
I believe that purity improves general health.		0.810	
I believe that purity reduces diseases		0.640	
I believe that purity is reflected in moral behavior.		0.606	
I consider purity to be a manifestation of Islamic civilization.		0.702	
I believe that purity enhances self-confidence.		0.540	
I consider purity to be an indispensable daily ritual.		0.539	
I believe that purity increases concentration in prayer.		0.711	
I believe that purity makes me more committed to worship.		0.812	
I perform ablution before every obligatory prayer.			0.640
I arrange the pillars of ablution and ensure continuity.			0.674
I take a shower after sex according to Islamic law.			0.663
I am careful to perform shower for Friday.			0.561
I remove impurities immediately upon occurrence.			0.601
I adhere to the rules of tayammum when water is unavailable.			0.540
I check the purity of my body, clothing, and place before prayer.			0.618
I use a toothbrush (Siwak) before prayer.			0.553
I change dirty clothes regularly.			0.843
I trim my nails regularly.			0.610
I remove armpit and pubic hair regularly.			0.713
I keep my place clean during prayer.			0.611
I use water sparingly without waste.			0.731
I use hand sanitizer when needed.			0.630
I pay attention to personal hygiene before bed.			0.521
I am careful to maintain purity while traveling.			0.622

Test-retest reliability

A total of 279 participants completed this questionnaire a second time two weeks later, and the sample size met the statistical and scientific requirements for test-retest reliability. The reliability values of the ICC equation for all questionnaire items and for the three factors ranged from 0.823-0.914, which is statistically significant ($P < 0.01$), indicating that the test–retest reliability is acceptable and highly reliable.

Internal consistency reliability

The results of Cronbach's internal consistency analysis revealed that the three questionnaire factors (knowledge, attitudes, and practices) achieved high values after items that did not achieve sufficient satisfaction (0.4) were eliminated. The values of this test were 0.794, 0.911, and 0.802, respectively. With respect to the internal consistency values of the Cronbach's α equation for the independent items, the results showed that all values ranged between 0.604 and 0.851. Therefore, there is no need to eliminate any of these items, as all the values are high and appropriate.

DISCUSSION

The knowledge, attitudes, and practice (KAP) model is assumed to be essential for understanding the health and religious beliefs of Muslims regarding the concept of purity, and developing a scientific tool to validate these aspects will help improve knowledge, modify attitudes, and train Muslims in various aspects of purity (Liu et al., 2016). Previous studies, particularly Arabic studies, have shown that many studies have examined the concept of purity from a legal and religious perspective only (Tayeb & Al-Halis, 198; Al-Shanti & Abu Wahdan, 2018; Al-Azmi & Mansour, 2006). However, there is not a single study with the same title as this research. Because purity is an integral part of worship and many acts of worship are not acceptable without purity, such as fasting and circumambulation (*Tawaf*), and because purity is an essential part of a Muslim's life and an additional means of maintaining general health and a beautiful appearance, Islam has clearly focused on its importance, and the Holy Quran emphasizes ritual bathing, ablution, and avoiding impurity.

Accordingly, some Muslims have misinformation about the application of the concept of purity in terms of knowledge, attitudes, and practices (Al-Khunaizan, 2020; Al-Sharif, 2017). Some may not perform the agreed-upon principles of Islamic scholars to achieve purity. For example, some people do not perform ablution correctly, nor do some people perform ritual ablution after sexual impurity (*Janabah*). Many people may not brush their teeth, whether with a toothbrush or a Siwak. All these manifestations are due to a lack of knowledge, false negative attitudes, or a lack of skills. Consequently, the idea of developing this tool arose to help Muslims achieve the highest levels of purity according to the three dimensions. Conversely, a study by Ng (2019) and others showed that people who regularly perform prayers are more attentive to their physical health and hygiene than a control group who do not believe in purity.

The KAP instrument, which in its initial version consisted of 81 items, was constructed via content validity measures, including reliability and representativeness equations. The questionnaire consisted of three factors: knowledge, attitudes, and practices. The first factor focused on Muslims' knowledge of the concept of purity, its obligations and Sunnah, the nullifiers of ablution, the importance of ritual baths, the conditions of purity, and other factors. The attitude factor encompassed Muslims' orientations, feelings, and beliefs regarding the concept of purity, which primarily revolved around their degree of belief in certain beliefs and intellectual orientations toward purity. Finally, the third factor focused on the degree to which Muslims practice and apply the concept of purity, removing impurities, the conditions of ablation, and the extent to which they perform these rituals.

The reliability and validity of the tool were verified through the most common and widely used scientific statistical methods for evaluating the construction of questionnaires and data collection, which can be used to evaluate the reliability and effectiveness of the tool for the target group. Content validity was initially verified through calculations of the CVR and S-CVI values in the first round. As a result, a total of 17 items that did not meet the conditions of content validity and the percentage of agreement between the arbitrators were deleted. In the end, the questionnaire consisted of 64 items out of the 81 items that met the I-CVI criteria, which is higher than 0.8, and obtained a rating higher than 0.99 on the S-CVI/Ave equation.

Since EFA is the most commonly used method, it was applied to verify construct validity. As a result, all items with a saturation rate of less than 0.4 were deleted. These were 4 items from the first factor, 6 items from the second factor, and 5 items from the third factor. Therefore, the final version of the scale included 49 items distributed across three factors: practice (n=15), attitudes (n=18), and knowledge (n=16). Note that all the items of the second and third factors are positive. To verify the reliability of the instrument, the test–retest reliability equation was used with a two-week interval. The ICC equation was applied, and the results revealed that the reliability values were high. On the other hand, Cronbach's α equation was applied to the study tool, which consists of knowledge, attitudes, and practices factors. The results indicated that the instrument demonstrated an acceptable level of internal consistency, with all values falling within commonly accepted thresholds. These findings suggest a reasonable degree of scale stability, consistent with prior assessments. Accordingly, the questionnaire may be considered suitable for use in research contexts, including potential diagnostic or intervention-related applications, subject to further validation.

This is the first study of this topic in the world; therefore, several limitations accompany the stages and procedures of its implementation, the most important of which is that the response rate of participants to the study tool was low and did not exceed 10%. On the other hand, there are no empirical studies on purity. Among the other limitations is that the factor of knowledge took a great deal of effort and time among the arbitrators to agree on the scientific and religious truth of these items, as Islamic sects differ among themselves in the cognitive aspect. This limitation was controlled by deleting all the disputed items and keeping what most Islamic sects agreed upon and what most Muslims agree upon. The number of experts involved in establishing content validity was relatively limited (n = 7), due to difficulties in recruiting a larger panel, as many of the experts who were invited declined to participate.

CONCLUSION

The present study describes the development of a KAP questionnaire designed to assess knowledge, attitudes, and practices related to the concept of purity among Muslims in Jordan. The findings provide initial evidence of acceptable content validity, construct-related indicators, and internal consistency within the study sample. These results suggest that the instrument demonstrates preliminary psychometric adequacy; however, they should be interpreted as exploratory in nature. At this stage, the questionnaire may serve as a research-oriented measure to support further empirical investigations of purity-related concepts in Islamic contexts. Its potential use in educational, religious, or training settings remains tentative and would require additional validation across diverse samples and settings. Future studies are recommended to extend the psychometric evaluation of the instrument through more advanced analyses, including confirmatory factor analysis and assessments of convergent validity.

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AUTHOR CONTRIBUTION STATEMENT

BA acted as the main researcher who conceptualized, formal analysis, methodology, supervisor, analyzing research results, and conducted the research. MD acted as the Co-author who supported the funding acquisition, software, administration, editing, reviewing, and resources.

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