

Validity and Reliability of a Questionnaire on Knowledge, Attitude, and Practices toward Personal Hygiene among Primary School Children in Abha, Kingdom of Saudi Arabia

Sriram Chandramohan, Ahmed Hazazi

Lecturer, Department of Public Health, College of Health Sciences, Saudi Electronic University, Abha Branch, Kingdom of Saudi Arabia

ABSTRACT

Objective: The objective of the study was to determine the validity and reliability of knowledge attitude and practice (KAP) questionnaire for measuring the personal hygiene among the primary school children.

Materials and Methods: The cross-sectional study was conducted among the primary school children from fourth, fifth, and sixth classes and content validity was performed by the high-quality professionals whereas the face validity was achieved by the pilot study. Reliability of the questions was tested using the Cronbach's alpha.

Results: The study results showed that most of the corrected item-total correlation in terms measuring the internal consistency of KAP domain items is more 0.3 and it shows that the correlation is reasonable and the Cronbach's alpha is also in the acceptable range ($\alpha = 0.716$).

Conclusion: This is a feasible, valid, and reliable questionnaire for assessing the KAP of personal hygiene among primary school children in the local community.

Key words: Content validity, Knowledge attitude and practice, Personal hygiene, Reliability

INTRODUCTION

Knowledge refers to the level of understandings that a person has toward certain matters whereas the attitude is a propensity toward a particular thing or an individual or a specific situation and the practice is defined as the noticeable action toward the definite activities.^[1] Knowledge, attitude, and behavior model is very well supported by the knowledge attitude and practices (KAP) of the individual person in which the knowledge about a particular health issue plays a key role in shaping the attitude and thereby transforming it into a positive attitude, and further it amends the behavioral change.^[2] It is evident that the person who has acquired sufficient knowledge about the specific health problems will change their attitudes and it will also facilitate toward adopting the correct practices by altering their behavior. The information regarding the KAP toward a definite activity is used as an efficiently tool in assessing the effectiveness of intervention programs, and it is also being used to measure the target population's KAP on precise health areas and also it gives us the chance to understand their needs,

demands and the barriers for enhancing their awareness and accepting the accurate practices.^[3] There are various studies conducted across different countries of the world on measuring KAP toward personal hygiene, nutrition, and diseases and it has been conducted at the community level and also at the hospital level with different study populations.^[4-8] There is a significant rise in the burden of communicable diseases due to poor personal hygiene,^[9] and school become an active place for the transmission of infection between the students, and it also serves as a home for molding the attitude and behavior of children regarding the personal hygiene.^[10,11] In Saudi Arabia, the parasitic and intestinal infections are quite prevalent because of the lack of personal hygiene,^[12,13] and another study in Saudi Arabia demonstrated a significant association between the lack of good personal hygiene practices and parasitic infection.^[14] However, there is lack of validated and reliable instrument for measuring the KAP regarding the personal hygiene among primary school children. Even if the tool is developed, it is not measuring the aspects accurately, and the results are

CORRESPONDING AUTHOR:

Sriram Chandramohan
Department of Public Health, College of Health Sciences, Saudi Electronic University, Abha Branch, Kingdom of Saudi Arabia.
E-mail: S.chandram@seu.edu.sa

Submission: 09-2017; Peer Review: 10-2017; Acceptance: 11-2017; Publishing: 12-2017

not consistent as a result of not performing the validity and reliability test on the specific instrument. Therefore, the current study aimed at developing a valid and reliable tool to evaluate the KAP in Abha primary school children toward their personal hygiene.

MATERIALS AND METHODS

This was a cross-sectional study conducted in a selected primary school in Abha city for constructing a valid and reliable questionnaire on KAP of personal hygiene. It was a pilot study carried out using a structured questionnaire among fifty primary school children from the fourth, fifth, and sixth levels.

Questionnaire

There are questions related to KAP of personal hygiene. Knowledge refers to the awareness of children about personal hygiene and the potential risk of infectious diseases. Attitude is student's opinion about the personal hygiene whereas practice is the current activities of school children related to personal hygiene. The questionnaire includes three sections (1) there are three questions for assessing the knowledge about personal hygiene, (2) 11 questions for measuring practices of personal hygiene, and (3) three questions for determining the attitudes of primary school children toward personal hygiene. The questionnaire is framed in English, translated into Arabic (local language) and back-translated into English to check the translation.

Ethical Permission

Ethical permission was obtained from the Research Ethics Committee, College of Medicine, King Khalid University, Abha, Kingdom of Saudi Arabia.

Content Validity

The content of the KAP questionnaire on personal hygiene was evaluated by the expert panel which includes two public health practitioner and a hygiene specialist.

Face Validity

After the completion of content validity by the expert panel and the pre-test was done among the fifty primary school children for measuring the face validity. A self-administered structured questionnaire was distributed by the researcher to the students, and the students were asked to fill the questions. The students were encouraged to ask a doubt if something is not clear or not understandable to them.

Data Analysis

The data analysis was performed using SPSS (version 17.0, SPSS Inc. Chicago, IL, USA). The internal consistency of KAP of personal hygiene was carried out using the Cronbach's alpha.

RESULTS

A total of fifty students studying fourth, fifth, and sixth classes from a selected primary school were participated in the study. Dichotomous statements were used to measure the KAP of personal hygiene which is illustrated in Table 1. Correlation matrix is explained in Table 2 which clearly shows most of the questions have a significant relationship with each other whereas some shows an inverse relationship.

Summary statistics for the 17 items including the scale are shown in Table 3 as scale statistics. The mean value is 13.42 with a variance of about 7.02 and the standard deviation is 2.65. The reliability values are presented in terms of Cronbach's alpha. The Cronbach's alpha is 0.716 which is raw or unstandardized value of alpha whereas Cronbach's alpha based on standardized items is 0.778, and it represents the stronger the items are inter-related, the more likely the test is consistent.

Table 4 summarizes the corrected item-total correlation, and if it is more than 0.3, it is considered as a good correlation. It is evident that most the values of corrected item-total correlation in terms of KAP of personal hygiene is more than 0.3 which

Table 1: Dichotomous statements to measure the KAP of personal hygiene

Q. No	KAP of personal hygiene	Options 1	Options 2
1	Does boiling water kill germs?	Yes	No
2	Spraying pesticides will help to control the spread of diseases	True	False
3	Stagnant water and dumping areas are home for mosquitoes	Yes	No
4	Do you wash hands before meal?	Yes	No
5	Do you wash hands after going to the toilet?	Yes	No
6	Do you cover your mouth and nose during coughing and sneezing?	Yes	No
7	Do you wash hands after coughing and sneezing?	Yes	No
8	Do you share your food and drinks even if you are sick?	Yes	No
9	Do you wear sandals all the time?	Yes	No
10	Do you take bath every day?	Yes	No
11	Do you brush twice, daily?	Yes	No
12	Do you use toothbrush and paste while brushing?	Yes	No
13	Do you cut your nails regularly?	Yes	No
14	Do you dispose waste to municipal waste collectors?	Yes	No
15	Personal hygiene and clean surroundings are important for healthy living	True	False
16	Sharing knowledge about healthy practices will lead to a disease free society?	Agree	Disagree
17	I am interested in increasing my knowledge about hygiene measures	Yes	No

KAP: Knowledge, attitude, and practice

Table 2: Inter-item correlation matrix

Q. No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1.000	0.082	0.434	0.436	0.101	0.191	0.034	0.193	0.147	-0.129	0.013	0.246	0.111	0.054	0.170	0.261	0.246
2	0.082	1.000	0.125	0.060	-0.189	0.028	0.145	0.036	-0.021	0.132	-0.157	-0.221	-0.062	-0.221	0.272	0.058	0.086
3	0.434	0.125	1.000	0.344	0.234	0.106	0.010	0.090	0.202	-0.235	-0.016	-0.007	0.024	-0.007	0.112	0.155	0.161
4	0.436	0.060	0.344	1.000	0.378	0.272	0.312	-0.089	0.239	0.174	0.298	0.316	0.506	0.316	0.479	0.212	0.692
5	0.101	-0.189	0.234	0.378	1.000	0.197	0.202	-0.018	0.425	0.044	0.188	0.236	0.383	0.236	-0.052	0.141	0.236
6	0.191	0.028	0.106	0.272	0.197	1.000	0.364	-0.073	0.287	0.014	0.343	0.393	0.442	0.147	0.272	0.250	0.393
7	0.034	0.145	0.010	0.312	0.202	0.364	1.000	-0.143	0.295	0.203	0.393	0.290	0.365	-0.032	0.312	0.113	0.290
8	0.193	0.036	0.090	-0.089	-0.018	-0.073	-0.143	1.000	0.242	-0.115	-0.206	0.193	-0.113	0.193	-0.312	0.138	0.032
9	0.147	-0.021	0.202	0.239	0.425	0.287	0.295	0.242	1.000	0.065	0.142	0.345	0.028	0.345	-0.075	0.206	0.118
10	-0.129	0.132	-0.235	0.174	0.044	0.014	0.203	-0.115	0.065	1.000	0.063	-0.048	0.227	-0.048	0.174	0.110	0.102
11	0.013	-0.157	-0.016	0.298	0.188	0.343	0.393	-0.206	0.142	0.063	1.000	0.430	0.588	0.272	0.298	-0.030	0.430
12	0.246	-0.221	-0.007	0.316	0.236	0.393	0.290	0.193	0.345	-0.048	0.430	1.000	0.518	0.457	-0.060	0.306	0.457
13	0.111	-0.062	0.024	0.506	0.383	0.442	0.365	-0.113	0.028	0.227	0.588	0.518	1.000	0.306	0.506	0.169	0.518
14	0.054	-0.221	-0.007	0.316	0.236	0.147	-0.032	0.193	0.345	-0.048	0.272	0.457	0.306	1.000	-0.060	0.306	0.457
15	0.170	0.272	0.112	0.479	-0.052	0.272	0.312	-0.312	-0.075	0.174	0.298	-0.060	0.506	-0.060	1.000	-0.082	0.316
16	0.261	0.058	0.155	0.212	0.141	0.250	0.113	0.138	0.206	0.110	-0.030	0.306	0.169	0.306	-0.082	1.000	0.306
17	0.246	0.086	0.161	0.692	0.236	0.393	0.290	0.032	0.118	0.102	0.430	0.457	0.518	0.457	0.316	0.306	1.000

Table 3: Item analysis

Reliability statistics	Cronbach's alpha	Cronbach's alpha based on standardized items			Number of items
	0.716	0.778			17
Scale statistics	Mean	Variance	SD	Number of items	
	13.42	7.024	2.650	17	

SD: Standard deviation

Table 4: Internal consistency of KAP domain items (n=50)

Q. No.	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
1	12.60	6.245	0.324	0.702
2	12.78	6.706	0.033	0.740
3	12.68	6.385	0.198	0.717
4	12.46	6.335	0.652	0.688
5	12.48	6.540	0.347	0.703
6	12.52	6.214	0.475	0.690
7	12.72	5.879	0.415	0.690
8	13.12	6.802	0.003	0.741
9	12.54	6.253	0.404	0.695
10	13.00	6.571	0.080	0.736
11	12.74	5.992	0.351	0.699
12	12.50	6.255	0.506	0.689
13	12.56	5.925	0.572	0.677
14	12.50	6.500	0.321	0.704
15	12.46	6.662	0.316	0.707
16	12.56	6.292	0.346	0.700
17	12.50	6.092	0.634	0.679

KAP: Knowledge, attitude, and practice

implies that the correlation is good. As a whole, the Cronbach's alpha coefficients were acceptable for KAP of personal hygiene ($\alpha = 0.716$).

DISCUSSION

The present study is designed for constructing a valid and reliable questionnaire for assessing the KAP of personal hygiene among the primary school children. Content validity is completed by the experts in the respective field and face validity is accomplished by the pilot study among the target populations in the current study. One study conducted in Malaysia for validating the KAP questionnaire for lifestyle also had used both face and content validity technique for validating their questionnaire.^[15] The internal consistency of the questionnaire is determined using the Cronbach's alpha. The selected KAP questionnaire in the study revealed an acceptable internal consistency ($\alpha = 0.716$). There are various literature which support that the standard value of Cronbach's alpha ranges between 0.70 and 0.95^[16,17] which supports the study results. Similarly, a study conducted by Tavan *et al.* in Iran used Cronbach's alpha for determining the internal consistency of KAP questionnaire regarding disaster preparedness and the internal consistency ($\alpha = 0.785$) which was slightly higher than the current study.^[18] The study result also acknowledged by another study conducted in Malaysia also carried out the reliability test of KAP questionnaire toward dengue fever prevention using the Cronbach's alpha and the internal consistency is $\alpha = 0.798$ which is also somewhat greater than the present study.^[19] Nearly same result was observed in a study conducted by Ahmed in Maldives for assessing the KAP of dengue fever prevention among the male population.^[20]

CONCLUSION

The KAP questionnaire for assessing the personal hygiene among the primary school children has sufficient validity and

reliability. The instrument can serve as a significant tool for determining the KAP of personal hygiene in the local community.

REFERENCES

1. Baranowski T, Cullen KW, Nicklas T, Thompson D, Baranowski J. Are current health behavioral change models helpful in guiding prevention of weight gain efforts? *Obes Res* 2003;11:23S-4.
2. Gumucio S, Merica M, Luhmann N, Fauvel G, Zompi S, Ronsse A, *et al.* The KAP Survey Model. Available from: https://issuu.com/medecinsdumonde/docs/mdm_guide_kap_survey_2011. [Last accessed on 2017 Dec 7].
3. World Health Organization. 2008 a Guide to Developing Knowledge, Attitude and Practice Surveys. Available from: http://apps.who.int/iris/bitstream/10665/43790/1/9789241596176_eng.pdf. [Last accessed on 2017 Dec 7].
4. Abiola AO, Nwogu EE, Ibrahim MT, Hassan R. Effect of health education on knowledge, attitude and practices of personal hygiene among secondary school students in rural Sokoto, North West, Nigeria. *Niger Q J Hosp Med* 2015;22:181-90.
5. Abd Elaziz KM, Bakr IM. Assessment of knowledge, attitude and practice of hand washing among health care workers in Ain Shams University hospitals in Cairo. *J Prev Med Hyg* 2015;50:19-25.
6. Gautam A, Bhatta DN, Aryal UR. Diabetes related health knowledge, attitude and practice among diabetic patients in Nepal. *BMC Endocr Disord* 2015;15:25.
7. Ho TS, Huang MC, Wang SM, Hsu HC, Liu CC. Knowledge, attitude, and practice of dengue disease among healthcare professionals in southern Taiwan. *J Formosan Med Assoc* 2013;112:18-23.
8. Wall DE, Least C, Gromis J, Lohse B. Nutrition education intervention improves vegetable-related attitude, self-efficacy, preference, and knowledge of fourth-grade students. *J Sch Health* 2012;82:37-43.
9. World Health Organization. Better Health for Poor Children. Available from: http://www.who.int/child_adolescent_health/documents/a91061/en/index.html. [Last accessed on 2017 Dec 7].
10. Deb S, Dutta S, Dasgupta A, Misra R. Relationship of personal hygiene with nutrition and morbidity profile: A study among primary school children in south Kolkata. *Indian J Community Med* 2010;35:280-4.
11. Varu RB. School Health Services in India. The Social and Economic Context. New Delhi: Sage Publications Pvt. Ltd.; 2008.
12. Barnawi AB, Tonkal AM, Fouad MA, Al-Braiken FA. Detection of *Entamoeba histolytica/dispar* in stool specimens by using enzyme-linked immunosorbent assay in the population of Jeddah city, Saudi Arabia. *J Egypt Soc Parasitol* 2007;37:143-50.
13. El-Sheikh SM, El Assouli SM. Prevalence of viral, bacterial and parasitic enteropathogens among young children with acute diarrhea in Jeddah, Saudi Arabia. *J Health Popul Nut* 2001;19:25-30.
14. Al-Mohammed MI, Amin TT, Aboulmagd E, Hablus HR, Zaza BO. Prevalence of intestinal parasitic infections and its relationship with socio-demographics and hygienic habits among male primary schoolchildren in Al-Ahsa, Saudi Arabia. *Asian Pac J Trop Med* 2010;906-912.
15. Hiew CC, Chin YS, Chan YM, Nasir MT. Development and validation of knowledge, attitude and practice on healthy lifestyle questionnaire (KAP-HLQ) for Malaysian adolescents. *J Nutr Health Sci* 2015;2:407.
16. Cohen R, Swerdlik M. Psychological Testing and Assessment. Boston: McGraw-Hill Higher Education; 2010.
17. DeVellis R. Scale Development: Theory and Applications: Theory and Application. Thousand Okas, CA: Sage; 2003.
18. Tavan H, Menati W, Azadi A, Sayehmiri K, Sahebi A. A questionnaire to measure nurses' disaster preparedness. *J Clin Diagnostic Res* 2016;10:IC06-9.
19. Abdullah MN, Azib W, Harun WF, Burhanuddin MA. Reliability and construct validity of knowledge, attitude and practice on dengue fever prevention questionnaire. *Am Int J Contemp Res* 2013;3:69-75.
20. Ahmed N. Knowledge, Attitude and Practice of Dengue Fever Prevention among the People in Male, Maldives. (Master of Public Health Program in Health Systems Development). Thailand: Chulalongkorn University; 2007

HOW TO CITE THIS ARTICLE:

Chandramohan S, Hazazi A. Validity and Reliability of a Questionnaire on Knowledge, Attitude, and Practices toward Personal Hygiene among Primary School Children in Abha, Kingdom of Saudi Arabia. *Int J Prevent Public Health Sci* 2017;3(4):9-12.