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Knowledge, Attitude and Practice survey on healthy lifestyle in people with HIV

Inquérito de Conhecimento, Atitude e Prática sobre estilo de vida saudável em pessoas com HIV

Encuesta de Conocimientos, Actitudes y Prácticas sobre estilo de vida saludable en personas con VIH

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Abstract

Objective: to develop and assess a Knowledge, Attitude and Practice survey on healthy lifestyle in people with human immunodeficiency virus. **Method:** a development study, with the elaboration of survey through of an integrative review and analysis of the guidelines; content and appearance analysis by 22 expert judges; and semantic analysis by 22 outpatients. The proportion of positive assessments of the items was measured, considering a percentage equal to or greater than 85%. **Results:** the survey had three domains and seven axes: chronic diseases in people with human immunodeficiency virus; body weight control; healthy eating; physical exercise; avoiding smoking, alcohol and illicit drugs; stress control/reduction; antiretroviral and other medication compliance. Knowledge and attitude domains had 10 questions, and practice domains had 11. In the assessment by expert judges, nurses, doctors and nutritionists participated, with positive agreement of items above 85%. Patients underwent semantic analysis, with 100% positive agreement in the domains. **Conclusion and implications for practice:** the survey had adequate evidence of validity, to be used by nurses and other health professionals, to support care, educational strategies and research with people living with the human immunodeficiency virus.

Keywords: HIV; Lifestyle; Chronic Disease; Surveys and Questionnaires; Nursing.

Resumo

Objetivo: desenvolver e avaliar um inquérito de Conhecimento, Atitude e Prática sobre estilo de vida saudável em pessoas com vírus da imunodeficiência humana. **Método:** estudo de desenvolvimento, com elaboração do inquérito por meio de revisão integrativa e análise das diretrizes; análise de conteúdo e aparência por 22 juízes especialistas; e análise semântica por 22 pacientes em acompanhamento ambulatorial. Mensurada a proporção de avaliações positivas dos itens, considerando-se percentual igual ou maior a 85%. **Resultados:** o inquérito teve três domínios e sete eixos: doenças crônicas em pessoas com vírus da imunodeficiência humana; controle do peso corporal; alimentação saudável; prática de exercício físico; evitar fumo, álcool e drogas ilícitas; controle/redução do estresse; adesão aos antirretrovirais e outros medicamentos. Domínios conhecimento e atitude tiveram 10 perguntas, e o de prática, 11. Na avaliação pelos juízes especialistas, participaram enfermeiros, médicos e nutricionista, com concordância positiva dos itens acima de 85%. Os pacientes fizeram a análise semântica, com concordância positiva nos domínios de 100%. **Conclusão e implicações para a prática:** o inquérito teve evidência de validade adequada, para ser utilizado por enfermeiros e outros profissionais de saúde, para subsidiar a assistência, estratégias educativas e pesquisas com pessoas vivendo com o vírus da imunodeficiência humana.

Palavras-chave: HIV; Estilo de Vida; Doença Crônica; Inquéritos e Questionários; Enfermagem.

Resumen

Objetivo: elaborar y evaluar una encuesta de conocimientos, actitudes y prácticas sobre estilo de vida saludable en personas con virus de inmunodeficiencia humana. **Método:** estudio de desarrollo, con la elaboración de la encuesta a través de una revisión y análisis integrador de las directrices; análisis de contenido y apariencia por 22 jueces expertos; y análisis semántico por 22 pacientes ambulatorios. Se midió la proporción de valoraciones positivas de los ítems, considerando un porcentaje igual o superior al 85%. **Resultados:** la encuesta tuvo tres dominios y siete ejes: enfermedades crónicas en personas portadoras del virus de la inmunodeficiencia humana; control del peso corporal; alimentación saludable; ejercicio físico; evitación del tabaquismo, alcohol y drogas ilícitas; control/reducción del estrés; adherencia a los antirretrovirales y otros medicamentos. Los dominios conocimientos y actitudes tenían 10 preguntas y los dominios práctica tenían 11. En la evaluación de los jueces expertos, participaron enfermeros, médicos y nutricionistas, con concordancia positiva de los ítems superior al 85%. Los pacientes fueron sometidos a análisis semántico, con 100% de concordancia positiva en los dominios. **Conclusión e implicaciones para la práctica:** la encuesta tuvo pruebas adecuadas de validez, para ser utilizada por enfermeros y otros profesionales de la salud, para apoyar la asistencia, las estrategias educativas y la investigación con personas que viven con el virus de la inmunodeficiencia humana.

Palabras-clave: VIH; Estilo de Vida; Enfermedad Crónica; Encuestas y Cuestionarios; Enfermería.

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INTRODUCTION

With Highly Active Antiretroviral Therapy (HAART), Human Immunodeficiency Virus (HIV) infection has gone from a progressive and fatal disease to a chronic and controllable condition, with a consequent reduction in mortality.[1] Concurrent with the increase in life expectancy, people living with HIV (PLHIV) became more susceptible to the onset of other chronic diseases. Rates of myocardial infarction, heart failure, stroke, and other manifestations of cardiovascular disease, such as pulmonary hypertension and sudden cardiac death, are significantly higher in PLHIV than in uninfected control subjects, even in the context of viral suppression and effective HAART.[2] These elevated risks persist after sociodemographic and clinical risk factors are accounted for, and may be partially attributed to chronic inflammation and immune dysregulation by HIV.[2]

Despite the benefits of HAART on HIV suppression and increase in CD4+ T lymphocytes, metabolic alterations, bone demineralization, lipodystrophy and lactic acidosis occur after adaptation to HAART and its long-term use. These events are not specific to a type of antiretroviral drug, but the severity and incidence vary individually, depending on drug classes, which may lead to discontinuation of therapy or switching to regimens with fewer adverse effects.[3]

Studies also show that PLHIV who use alcohol and illicit drugs have reduced HAART compliance and viral suppression, in addition to toxicity, as the drugs interact with antiretrovirals, resulting in risk for liver disease, dysfunctions in drug absorption and metabolism, in addition to reducing the effectiveness of treatment and increasing the chances of virus transmission and co-infections.[4,5]

Inflammation and smoking are independent predictors of morbidity and mortality in PLHIV, as the burden of smoking exacerbates inflammation, with the hypothesis that greater intensity and duration of smoking is associated with an increase in C-reactive protein, an inflammatory marker. Thus, reducing the intensity and duration of smoking to cessation may be helpful in reducing levels of inflammation and mitigating HIV-related harm.[6] A study carried out in South Africa also showed that, among PLHIV, malnutrition, obesity and a sedentary lifestyle are highlighted, with diets of low nutritional diversity, rich in carbohydrates, with few fruits and vegetables, no regular exercise, and limited understanding of the health impact of obesity.[7]

Given the above, changes in health behavior are essential so that PLHIV are not affected by other chronic conditions and have a better quality of life. This research arose from the need to analyze Knowledge, Attitude and Practice, when it was found after the development and validity of an educational booklet to promote a healthy lifestyle in PLHIV,[8] which there was no published form capable of assessing whether these patients were aware of, would like to change their habits and practiced the health guidelines.

Thus, this study was designed to develop and assess a Knowledge, Attitude and Practice (KAP) survey, which consists of a set of questions to measure what the population knows, thinks and acts on a given problem, in addition to pointing out possible avenues for interventions.[9] KAP concepts were established from a similar study: knowledge means remembering specific facts within an individual's educational system, ability to apply these facts to problem-solving, and emitting concepts with the understanding gained about a given event; attitude is to have opinions, feelings, predispositions and constant beliefs, directed to an objective, person or situation, regarding the affective domain and emotional dimension; practice is decision-making to perform an action, and is related to the psychomotor, affective, cognitive and social dimension domains.[10]

In this context, this study aimed to develop and assess a KAP survey on healthy lifestyle in people with HIV.

METHOD

This is a developmental study to design and assess a KAP survey to verify what PLHIV know, think and act in relation to a healthy lifestyle. The research was developed in 2019, in Fortaleza, Ceará, Brazil, in three stages: 1. KAP survey development; 2. KAP survey assessment by expert judges; 3. KAP survey assessment by PLHIV.

The study population consisted of expert judges and PLHIV. The infinite population formula was used, with statistical criteria in the minimum proportion of 85% agreement, with the relevance of each item assessed, and a difference of 15% in this agreement was admitted. The sample was defined by the formula:[11] $n=Z\alpha^2.P.(1-P)/d,^2$ where Zα is the confidence coefficient (95% - 1.96), referring to the correct decision-making based on the null hypothesis; P is the proportion expected from experts and indicates the adequacy of each item; d: represents the acceptable proportional difference from the expected. The calculation was determined by $n=(1.96)^2.(0.85).(0.15)/(0.15),^2$ the sample being 22 judges with expertise in HIV. In the same way, the sample of 22 PLHIV was calculated.

For the selection of expert judges, intentional non-probabilistic sampling was carried out, based on adapted inclusion criteria: having a master's degree (1 point) or a doctorate (2 points) in health; dissertation (1 point) or thesis (2 points) on PLHIV; published article on HIV (1 point); having participated in HIV research group/project (1 Score); to be a professor in courses in health involving assistance to PLHIV (2 points); professional experience in HIV hospitals or clinics (2 points).[12] Professionals should have at least six points to be included. The search for the judges took place on the *Platforma Lattes* of the Brazilian National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*), after invitation via e-mail or in person at the workplace.

PLHIV were recruited through convenience sampling at the *Hospital Universitário Walter Cantídio* Infectious Diseases Outpatient Clinic (HUWC) of the *Universidade Federal do* Ceará (UFC), while waiting for a medical appointment. Inclusion criteria were age 18 years or older, being on outpatient follow-up, being able to read the KAP survey and understand it, having more than 35 points on the Health Literacy Scale.[13] This scale was translated

and adapted to Brazilian Portuguese and contains 14 questions that assess health literacy in three dimensions: functional (5 items), communicative (5 items) and critical (4 items) literacy).[14] The answers follow a five-point Likert scale: (1) strongly agree, (2) agree, (3) neither agree nor disagree, (4) disagree, (5) strongly disagree. The score is calculated by the total sum of the items. If above 35 points, health literacy level is considered adequate.[13,14]

The KAP survey was developed based on an integrative review, whose research question was: what are the interventions for a healthy lifestyle in PLHIV?

The research question was supported by the PICo strategy, which represents an acronym for Patient or Population (People Living with HIV), Interest or Intervention (health education strategies) and Context (healthy lifestyle). Full articles available electronically, in Portuguese, English or Spanish, involving the theme, regardless of the year of publication, were included. Letters to the editor were excluded.

The articles were selected from the databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Índice Bibliográfico Español de Ciencias de La Salud (IBECS), Latin American and Caribbean Literature in Health Sciences (LILACS) and Scopus, and an electronic library, the Scientific Electronic Library Online (SciELO).

To survey the articles, the following descriptors were used: HIV; Acquired Immunodeficiency Syndrome; Hypertension; Highly Active Antiretroviral Therapy; Health promotion; Validity Studies; Technology; Health education; Chronic Conditions. All were from the Descriptors of Health Sciences (DeCS), from the Virtual Health Library and Medical Subject Headings (MeSH) from the National Library of Medicine, in Portuguese, English and Spanish, using the Boolean operator AND for crossings. The crosses performed were: [Acquired Immunodeficiency Syndrome AND Antiretroviral Therapy Highly Active AND Hypertension], [Acquired Immunodeficiency Syndrome AND Health Education AND Chronic Disease], [Acquired Immunodeficiency Syndrome AND Technology AND Health Education], [Health Promotion AND Acquired Immunodeficiency Syndrome], [HIV AND Hypertension AND Validity studies].

A total of 2,705 articles were found, 2,696 were excluded for not answering the guiding question, nine being selected for full reading. The issues identified to be addressed in the KAP survey were: interventions aimed at non-drug treatment compliance (body weight control, healthy eating, regular physical exercise, avoiding smoking, alcohol and illicit drugs, stress control/reduction), and interventions aimed at drug treatment compliance. To these findings, information from the guidelines for the treatment of PLHIV[15] and the prevention and control of chronic noncommunicable diseases (CNCD) was added.[16]

The KAP survey built was submitted to expert judges' assessment, who performed content and appearance analysis. After accepting to participate in the study, they received a kit with the Informed Consent Form (ICF), the KAP survey and the KAP survey assessment instrument. A period of 15 days was stipulated for assessment, for completing the self-applied questionnaire, containing two parts: 1. Identification and training data (name, date of birth, age, sex, profession, training time, degree, research projects, participation in a research group, work area, institution, function/position, time working in the area, scientific production, experience in validating educational instruments/materials); and 2. KAP survey content analysis (three questions about content adequacy in the three domains: Knowledge, Attitude and Practice). The answers to the questions for each domain were presented by dichotomous variables: (1) Yes, I agree with the proposed question; (2) I do not agree with the question proposed. The questionnaire had space for suggestions. If they did not return the questionnaire and the ICF within the deadline, the judges had another 15 days for delivery, being excluded from the study after this period, but, in this study, there were no exclusions.

Next, the KAP survey was assessed by PLHIV, who performed the semantic analysis, to verify if the items were understandable to the population for which it is intended, considering individuals of different socioeconomic levels and schooling. After signing the ICF in a private environment, participants received the printed KAP survey for reading, and then answered the assessment questionnaire. The average time of this procedure was 30 minutes. The self-administered questionnaire contained two parts: 1. Identification data (name, date of birth, age, sex, number of years of study, until which grade studied, category of exposure, time of diagnosis of positive HIV serology); and 2. KAP survey content analysis (three questions about content adequacy in the three domains: Knowledge, Attitude and Practice). The answers to the questions in each domain were based on dichotomous variables: (1) Yes, I agree with the proposed question; (2) I do not agree with the proposed question. The questionnaire had space for suggestions.

After KAP survey assessment by expert judges and PLHIV, the data obtained were analyzed by measuring the proportion of evaluators, who agreed on the positive item assessment.[17] Item relevance is reached through a percentage greater than or equal to 85% of agreement among evaluators.[11] Thus, the item that obtains a total percentage lower than 85%, for any of the assessed criteria, should be modified according to evaluators' suggestions or excluded. To characterize expert judges and PLHIV, frequency distributions, measures of central tendency and dispersion were performed, normality tests, taking as a reference a confidence interval of 95% for quantitative variables. IBM® SPSS® Statistics for Windows, Version 23.0 was used for statistical analysis.

The project was approved by the UFC Research Ethics Committee, under Opinion 2,481,617, and by the co-participating institution, HUWC, under Opinion 2,513,172. The study followed Resolution 466/2012 and all participants signed the ICF.

RESULTS

After an integrative literature review and analysis of health care guidelines for people with HIV, the KAP survey on a healthy lifestyle in PLHIV was created. The survey had three domains (knowledge, attitude and practice) with questions covering 7 subject

axes: 1. Chronic diseases in PLHIV; 2. Body weight control; 3. Healthy eating; 4. Practice of regular physical exercise; 5. Avoid smoking, alcohol and illicit drugs; 6. Stress control/reduction; 7. Compliance with antiretrovirals and other medications.

In the knowledge domain, 10 questions were formulated to measure the understanding of PLHIV about a healthy lifestyle. The answers to the questions occurred by the variables: (1) Yes, (2) No, (3) do not know. In the attitude domain, 10 questions were formulated to measure individuals' interest in situations or objectives. The answers occurred by the variables: (1) Yes, (2) No. In the practice domain, 11 questions were formulated to measure the execution of actions regarding healthy practices. The answers to the questions occurred by the variables: (1) Yes, (2) No, (3) do not know. The three domains allow assessment separately, obtaining adequate or inadequate knowledge, attitude and practice.

The KAP survey developed was then assessed by 22 expert judges with expertise in the area of HIV, who performed material content and appearance analysis. This group consisted of 15 nurses, a nutritionist, two general practitioners and four infectious disease specialists, which reached a score equal to or greater than six, based on the criteria mentioned in the Method. The affiliations of expert judges were: Ceará (*Universidade Federal do Ceará, Universidade Estadual do Ceará, Universidade de Fortaleza*), São Paulo (*Universidade de São Paulo*) and Rio de Janeiro (*Universidade Federal do Rio de Janeiro*). The mean and standard deviation (mean ± SD) were respectively: age (42.1 ± 10.3), time since graduation (18.2 ± 10.1) and time working in the area were respectively (13.0 ± 9.5). Table 1 shows the characterization of expert judges.

Subsequently, the KAP survey was assessed by the target population, composed of 22 PLHIV in outpatient follow-up, which occurred through semantic analysis. The mean and standard deviation (mean ± SD) were respectively age (41.5 ± 11.9), education (10.9 ± 2.9) and time of diagnosis of positive anti-HIV serology (9.0 ± 7 ,5). Table 2 characterizes these individuals.

All domains of the KAP survey assessed by experts had positive agreement above 85%, so there was no need for reassessment. The attitude domain had 100% agreement, the knowledge and practice domains had, respectively, 90.9% and 95.5% of positive agreement. Two judges who did not agree in the knowledge domain and one judge who did not agree in the practice domain did not leave any suggestions for changes. All PLHIV responded "yes" to the domains assessed. Thus, the domains' positive agreement was 100%, with no variation in the answers, therefore, a reassessment was not necessary. Table 3 shows KAP survey assessment by expert judges and PLHIV.

Therefore, the KAP survey on healthy lifestyle in PLHIV is validated in terms of content, appearance and semantics. The final instrument setting has 31 items, divided into three domains, with response options ranging from 1 to 3. With this study, we also suggest scoring criteria with a percentage total to classify patient responses in each domain as adequate or inadequate. It was considered as adequate knowledge, attitude and practice,

Table 1. Characterization of expert judges according to sociodemographic data (n=22). Fortaleza/CE, 2019.

Variables	N	%
Sex		
Female	21	95.5
Male	1	4.5
Profession		
Nurse	15	68.2
Physician	6	27.3
Nutritionist	1	4.5
Field of work		
Nursing/teaching	9	40.9
Nursing/care	6	27.3
Medicine/infectious diseases	6	27.3
Nutritionist/care	1	4.5
Degree		
Master's degree	5	22.8
Doctoral degree	17	77.2
Research concluded on HIV		
Yes	19	86.4
No	3	13.6
Participation in a research group		
Yes	19	86.4
No	3	13.6
Articles on HIV		
Yes	22	100.0
No	0	0.0
Experience in educational instrument/material validity		
Yes	16	72.7
No	6	27.3

Table 2. Characterization of people living with HIV according to sociodemographic data (n=22). Fortaleza/CE, 2019.

Variables	N	%
Sex		
Male	19	86.4
Female	3	13.6
Exposure category		
Sexual	22	100.0

Table 3. Assessment of the Knowledge, Attitude and Practice survey by expert judges and people living with HIV (n=44). Fortaleza/CE, 2019.

Knowledge, Attitude and Practice survey assessment	N	%	* 95%CI
Expert judges			
1. Knowledge domain: do the questions related to knowledge include the proposed theme and do they have an adequate language to be answered by PLHIV**?	20	90.9	69.37 - 98.40
2. Attitude domain: do the questions related to attitude contemplate the proposed theme and do they have an adequate language to be answered by PLHIV**?	22	100.0	81.50 - 100.0
3. Practice domain: do the questions related to practice contemplate the proposed theme and do they have an adequate language to be answered by PLHIV**?	21	95.5	75.11 - 99.76
People living with HIV			
1. Knowledge domain: can you understand all the questions related to knowledge?	22	100.0	81.50 - 100.0
2. Attitude domain: can you understand all the questions related to health?	22	100.0	81.50 - 100.0
3. Practice domain: can you understand all the questions related to practice?	22	100.0	81.50 - 100.0

*CI: Confidence Interval; **PLHIV: people living with HIV

the value equal to or greater than 70% of correct answers in the questions in each domain, in which the answers are correct when a participant answers "yes", scoring the question. With the exception of the practice domain, where for items 8 and 9, the appropriate answer will be "no". The answers were considered adequate or inadequate according to an integrative review carried out, in addition to the guidelines for health care for PLHIV. The KAP survey in full and the suggested criteria for assessment are presented, respectively, in Charts 1-2.

DISCUSSION

The elaboration of a KAP survey on a healthy lifestyle in PLHIV represents an important technology, as it directs the actions of professionals to promote this target audience's health, through the identification of knowledge about the disease and lifestyle, the assessment of attitudes and verification of its practice in daily habits, which, if inadequate, can generate risks for other chronic conditions.[18]

The development of quality materials enables educational interventions based on structured knowledge and information aimed at the clientele, contributes to the teaching-learning process and encourages behavioral changes.[19] Another study also showed that the application of a KAP survey about the Pap smear in pregnant women had a positive effect to mediate educational interventions, resulting in an improvement in the levels of knowledge about the test.[20]

For the construction of measurement instruments, it is essential to outline objectives that are connected with the concepts discussed, in addition to defining the target population, as it justifies the relevance of creating a specific instrument. Questionnaire items should not be constructed at random, nor restricted to technical and scientific knowledge, as it can make it difficult for patients to understand.[21] In this regard, the KAP survey was built from themes intrinsic to PLHIV's healthy lifestyle, based on a literature review, national and international guidelines, and with simple and direct language.

Among the topics addressed, the need to change eating habits stands out. Assessment of PLHIV's nutritional status is necessary for the proper institution of treatment and prevention of diseases, because adequate food consumption can reduce the side effects of medications, if they are involved with symptoms of malabsorption, in addition to preserving lean mass and promoting a better quality of life for these patients.[22]

It is also essential to measure knowledge, attitude and practice about physical exercise appropriate to clinically stable PLHIV's health conditions. Regular practice of physical exercise stimulates the immune system of these individuals, increases CD4+ T lymphocytes, reduces fat and glycemic index, increases muscle mass, with a reduction in metabolic syndrome and coronary risk factors.[23]

Another topic addressed was the use of alcohol, cigarettes and other drugs. Smoking can stimulate progression to AIDS and mortality in PLHIV, as the substances contained in cigarettes activate the inflammatory state, by association with C-reactive protein levels so that it increases the risk for chronic diseases such as type 2 diabetes mellitus and metabolic syndrome.[6] Additionally, high consumption of alcoholic beverages can lead individuals to indirect behaviors, such as reduced HAART compliance, increased sexual risk behaviors, which in turn compromise the clinical management of HIV infection and increase virus transmission.[24]

Regarding stress control, a study showed that mental disorders are associated with a higher viral load in PLHIV in clinical follow-up, and emotional stress can manifest itself in the form of pain and sleep disorders, which negatively impact the clinical course, even when individuals have adequate HAART compliace.[25] In this regard, the importance of mental health care for PLHIV is reinforced, as part of a set of non-pharmacological interventions, to encourage a healthy lifestyle and optimize the response to antiretrovirals.

Chart 1. Knowledge, Attitude and Practice Survey on healthy lifestyle in people living with HIV. Fortaleza/CE, 2019.

KNOWLEDGE ASSESSMENT - 1. Adequate (%): _____ 2. Inadequate (%): _____	
1. Are people living with HIV more likely to have other chronic diseases?	(1) Yes (2) No (3) Do not know
2. Do you think chronic diseases are lifelong?	(1) Yes (2) No (3) Do not know
3. Are diabetes, high blood pressure, lung disease and cancer chronic diseases?	(1) Yes (2) No (3) Do not know
4. Does maintaining proper body weight help prevent or control chronic disease?	(1) Yes (2) No (3) Do not know
5. Does cutting down on salt in food and eating healthy help prevent or control diabetes and heart disease?	(1) Yes (2) No (3) Do not know
6. Is physical exercise at least three times a week essential for a healthy life?	(1) Yes (2) No (3) Do not know
7. Is it important to avoid smoking, alcohol and other drugs to prevent heart disease, lung disease and cancer?	(1) Yes (2) No (3) Do not know
8. Can reducing everyday stress help you have a healthier lifestyle?	(1) Yes (2) No (3) Do not know
9. Is taking antiretroviral drugs every day, as prescribed, important for your health?	(1) Yes (2) No (3) Do not know
10. Is taking medication for chronic diseases (if any) every day, as prescribed by a doctor, important for your health?	(1) Yes (2) No (3) Do not know
ATTITUDE ASSESSMENT - 1. Adequate (%): _____ 2. Inadequate (%): _____	
1. Am I interested in performing routine exams according to medical advice?	(1) Yes (2) No
2. Do I intend to maintain my proper body weight?	(1) Yes (2) No
3. Do I think about reducing the salt in food to avoid chronic diseases?	(1) Yes (2) No
4. Am I interested in having a healthier diet?	(1) Yes (2) No
5. Do I feel like exercising at least three times a week?	(1) Yes (2) No
6. Do I want to quit smoking?	(1) Yes (2) No (3) Do not smoke
7. Do I intend to stop consuming alcoholic beverages?	(1) Yes (2) No (3) Do not drink
8. Do I want to stop using illicit drugs (marijuana, cocaine, crack, etc.)?	(1) Yes (2) No (3) Do not use
9. Do I want to be less stressed or lessen my sources of stress?	(1) Yes (2) No (3) Do not have
10. Do I want to take all my meds daily without forgetting?	(1) Yes (2) No
PRACTICE ASSESSMENT - 1. Adequate (%): ____ 2. Inadequate (%): _____	
1. Am I performing routine exams according to medical advice?	(1) Yes. How often? (2) No
2. Is my blood pressure and blood glucose controlled?	(1) Yes (2) No (3) Do not know
3. Am I worried about my weight?	(1) Yes (2) No (3) Do not know
4. Have I been able to reduce or avoid the use of salt in food?	(1) Yes (2) No
5. Do I eat more fruits and vegetables and less fried foods in my daily life?	(1) Yes (2) No
6. Do I exercise at least three times a week?	(1) Yes. Which one? (2) No
7. Did I quit smoking to preserve my health?	(1) Yes (2) No. Cigarettes/day? (3) Never smoked
8. Do I still drink alcohol?	(1) Yes. How often? (2) No (3) Never consumed
9. Do I still use illicit drugs (marijuana, cocaine, crack, etc.)?	(1) Yes. Which one and how often? (2) No (3) Never used
10. Was I able to reduce my stress and avoid stressful situations?	(1) Yes. What do you do? (2) No
11. Do I take all the medicines I need daily?	(1) Yes (2) No

Chart 2. Knowledge, Attitude and Practice Survey on healthy lifestyle in people living with HIV assessment criteria. Fortaleza/CE, 2019.

KAP survey assessment criteria	Score	
Knowledge: each item will have a score. People who score (1) for each item will receive 1 point, if they score (2) or (3) they will receive 0 (zero) points. Maximum score: 10 points.	Adequate: ≥ 70% (referring to 7 or more points)	Inadequate: <70% (referring to less than 7 points)
Attitude: each item will have a score. People who score (1) for each item will receive 1 point, if they score (2), they will receive 0 (zero) points. In items 6, 7, 8 and 9, scoring (3) will count one point each. Maximum score: 10 points.	Adequate: ≥ 70% (referring to 7 or more points)	Inadequate: <70% (referring to less than 7 points)
Practice: each item will have a score. People who score (1) for each item will receive 1 point, if they score (2), they will receive 0 (zero) points. In items 2 and 3, if (3) is scored, 0 (zero) points will be counted. In items 6, 7, 8 and 9, if (3) is scored, 0 (zero) points will be counted. Maximum score: 11 points.	Adequate: ≥ 70% (referring to 7 or more points)	Inadequate: <70% (referring to less than 7 points)

Drug treatment was also included in the KAP survey, as PLHIV need to actively participate in self-care management, with adequate HAAR compliance, as this represents the only treatment currently available for these patients, being essential to keep the infection under control and the viral load undetectable.[26] Moreover, professionals involved in the care of PLHIV must offer reception, qualified listening, guidance without moral judgments, to favor the creation of bonds and improve treatment compliance.

For the health technology assessment stage by expert judges, it is relevant to consider these professionals' expertise, to ensure that the materials do not contain incomplete information or inappropriate language for the target population.[21] In addition to expertise, the multidisciplinarity of experts who participated in this study, which included nurses, physicians and nutritionists, stands out, being essential for a more complete assessment of the KAP survey built, which addresses a common subject for different areas of knowledge.

Thus, for the KAP survey content analysis by experts, a positive agreement greater than 85% was used, in which the evidence of validity of the instrument in question was verified. In another research for a KAP survey construction and validity, the percentage greater than 80% of positive agreement among judges was considered valid.[27] It is noteworthy that in addition to reaching the values considered ideal for the internal validity of an instrument, it is also necessary to consider the points for improvement suggested by judges,[28] which did not occur in this study, due to the high positive agreement and absence of suggestions.

Moreover, the instrument semantic analysis by the target audience is necessary, because for a favorable application of the technology, it must be reliable to the target population's reality.[28] In this study, semantic analysis was considered satisfactory by PLHIV, as there was a reading and good understanding of the questions, and they did not leave suggestions or mention difficulties in answering the KAP survey. This finding corroborates another study that carried out the elaboration and validity evidence of a KAP survey for pregnant women about gestational hypertensive syndrome.[27]

For the developed instrument's assessment criteria, there is no consensus among the studies regarding the score that should be considered as satisfactory so that the scores can be classified as adequate or inadequate. Considering that the literature considers a variation in the percentage of correct answers between 50%[29] and 90%,[30] for this study it was suggested to consider adequate values equal to or greater than 70%.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

A KAP survey-type questionnaire on healthy lifestyle in PLHIV was developed and assessed, which was considered adequate by expert judges and target audience, reaching the percentage of positive agreement greater than 85% in just one round of instrument assessment, reaching the proposed objective. The instrument was built to enable the assessment of PLHIV's KAP and promote actions focused on healthy habits. Thus, the KAP survey is suitable for use by nurses and other health professionals, to support assistance, educational strategies and research aimed at PLHIV. It is also suggested that studies be carried out for the psychometric analysis of this questionnaire, for a better adequacy of the suggested score in the domain assessment.

One of the limitations of this study was failure to verify the exploratory factor validity, to analyze the instrument's internal consistency and satisfactory number of questions, to measure what the construct proposes to investigate. Therefore, after the development and assessment of this KAP survey, a study with a larger sample of patients is necessary for this score to be valid. Another possible limitation was the absence of suggestions by judges, who did not agree with some domains assessed, however, they did not leave changes that could be relevant for improving the instrument.

It is noteworthy that the application of this KAP survey may provide subsidies for nursing care, as well as for other areas that provide health care to PLHIV, in order to direct educational interventions to weaknesses in knowledge, attitude and practice about a healthy lifestyle, and thus guide health promotion practices.

AUTHOR'S CONTRIBUTIONS

Study design. Gilmara Holanda da Cunha. Marina Soares Monteiro Fontenele. Maria Amanda Correia Lima. Marli Teresinha Gimeniz Galvão. Maria Elisa Curado Gomes.

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