Research Article

DEVELOPMENT OF A RISK BEHAVIOR DIAGNOSTIC QUESTIONNAIRE FOR ANEMIA IN WOMEN OF REPRODUCTIVE AGE

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Abstract
The fact that anemia symptoms are sometimes perceived as mild and non-disruptive has led adolescents to be less concerned and appear to take it lightly. The aim of this study was to develop a questionnaire for the risk behavior diagnosis for anemia in women of reproductive age. A direct order from a husband is generally something that pregnant women cannot refuse. There is no validated questionnaire for risk behavior diagnosis for anemia in women of reproductive age in Indonesia. Based on the Extended Parallel Processing Model (EPPM), an initial questionnaire was prepared with 60 statement items divided into 6 constructs, namely: Perceived severity, Perceived susceptibility, Self-efficacy, Response efficacy, Danger control responses, and Fear control responses. The initial questionnaire was tested for content validity by involving 10 experts in the fields of nursing, public health, and psychology. Using the content validity ratio and content validity index, 43 items were produced with a content validity ratio value above 0.62 and a content validity index value above 0.78. Five women of reproductive age were included in the cognitive interview session after the questionnaire modification was carried out. This questionnaire can be used as the primary subject for further factor analysis. The developed items are the result of ongoing research, and it is hoped that this questionnaire will be a robust instrument that can be used elsewhere.

Keywords: anemia, content validity ratio, content validity index, risk behaviour, women of reproductive age

Background

A person is considered to have anemia when laboratory blood tests show Hb levels below 13.5 grams/dL in men or below 12 grams/dL in women. Groups at risk of iron deficiency anemia include toddlers. adolescent girls. and pregnant women. (Juffrie et al.. 2020; Setyobudihono et al.. 2020) Based on the 2018 Basic Health Research. as many as 32% or three out of ten Indonesian teenagers suffer from anemia. while based on data in 2019. anemia among female teenagers in South Kalimantan reached 42.45%. (Riskesdas. 2018; Riskesdas Kalsel. 2018) The fact that anemia symptoms are sometimes considered mild and not disruptive to life has made teenagers less worried and appear to take it lightly. This is one of the causes of failure to prevent anemia in women of reproductive age(National Institutes of Health. 2011).

A review by Jenner et al. 2005 in Emilia. et al. (2020) concluded that the most effective messages for health-promoting behaviors should be framed in terms of benefits rather than costs to the individual (Emilia et al.. 2020). Fear of the consequences of anemia. such as fatigue. weakness. and cognitive difficulties. may prompt individuals to more actively seek preventative measures and anemia is one of the factors that can worsen a mother's condition when she experiences postpartum bleeding (WHO et al.. 2025). These include seeking advice from a healthcare provider. adopting dietary changes. and engaging in activities that increase iron

intake (Ugli. 2024). The combination of fear and awareness about the potential impact of anemia on health and development is likely to have a more significant effect on the implementation of anemia prevention measures (Djati et al.. 2025) .

Scaring people to motivate them to change their behavior has been practiced for thousands of years. However. systematic empirical investigation of the power of fear appeals is only a little over 70 years old (Ferrara et al.. 2012). Since the 1950s. several theories have been proposed to explain the processing and effects of fear appeal messages. and the extended parallel process model (EPPM) is one of the most recent developments in this field. The EPPM integrates previous research on fear appeals in an attempt to answer the long-standing question of why fear appeals sometimes fail and sometimes succeed (Popova. 2012).

According to Kim Witte in The Extended Parallel Process Model (EPPM). fear arises when a person perceives a threat as serious and feels at risk (Witte. K.. Meyer. G.. Martell. 2001; Witte. 1992; Witte & Allen. 2000). The Risk Behavior Diagnosis (RBD) Scale has been shown to be useful for predicting attitudes about behaviors that govern change. and informing the development of targeted messages and interventions. (Witte & Allen. 2000)

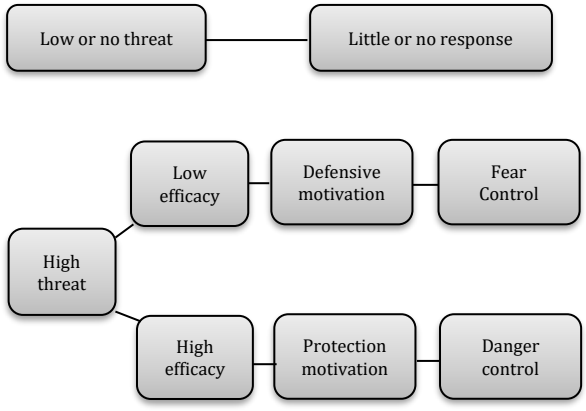

Figure 1 The extended parallel process model and expected responses to threat and efficacy levels (adapted from) (Witte. K.. Meyer. G.. Martell. 2001)

According to research by Witte and Allen (2000). the greatest behavioral changes occur when messages that evoke strong fear are accompanied by the belief that the recommended action is truly effective and can be carried out by the individual (high efficacy). Conversely. if messages that evoke strong fear are not accompanied by the belief that the action is effective or can be carried out (low efficacy). then what emerges is a more defensive response. such as avoiding. rejecting. or ignoring the message (Witte & Allen. 2000).

Modification and validation of the Risk Behavior Diagnosis Scale (RBDS) instrument for anemia in the Indonesian context is still relatively less researched compared to studies that only measure knowledge or attitudes. The aim of this study was to develop a questionnaire for the risk behavior diagnosis for anemia in women of reproductive age.

Method

The initial questionnaire was compiled based on research conducted by Lucy Popova (2012) who compiled conceptual definitions and operational definitions of constructs in EPPM (Popova. 2012). This study is an important initial step in providing evidence of content validity. namely the extent to which the questionnaire can measure the intended dimensions and is appropriate for its intended use. namely the Indonesian version of the RBD questionnaire for cases of anemia in women of reproductive age.

This research has obtained ethical feasibility for its implementation through the results of the ethical review of the Faculty of Medicine and Health Sciences. Lambung Mangkurat University (FKIK ULM) dengan nomor 072/KEPK-FKIK ULM/EC/VI/2026.

Question Item Collection

The initial questionnaire was developed based on previous research by Popova (2012) on the Extended Parallel Processing Model (EPPM). A four-person research team. consisting of two health promotion experts and one psychologist. developed the questionnaire into 60 items. These items consisted of 10 items per dimension. The questionnaire items were structured according to six dimensions. including:

a. Perceived severity.

Beliefs about the degree of danger of acquiring a disease or dangerous condition as a result of a particular behavior (Sukeri et al.. 2020). Negative consequences that an individual associates with an event or outcome (Miles. 2007a).

The dimensions forming perceived severity that will be developed include: Fatality dimension. a dimension that is more related to psychosocial severity such as the impact of the disease on life goals (E. Milne. 2016). Dimensions of medical and clinical consequence evaluation (Miles. 2007b). Dimensions of possible social consequences (Miles. 2007b). Champion. 1984 in Milne (2000) added 2 dimensions to perceived severity. namely: the long-term effects dimension. and the financial/career problems dimension (S. Milne et al.. 2000).

b. Perceived susceptibility.

Beliefs about one's risk of experiencing a threat (Ferrara et al.. 2012). The subjective belief that one may contract a disease or enter a dire situation because of certain behaviors (Sukeri et al.. 2020).

Dimensions of perceived vulnerability are based on previous literature. including cognitive appraisals (e.g. likelihood assessments). intuitive appraisals (e.g. feeling vulnerable to HIV) and risk importance (e.g. whether HIV risk is something they have ever thought about) (Napper et al.. 2012).

c. Self-efficacy.

Beliefs about one's ability to carry out recommended responses to prevent a threat (Ferrara et al.. 2012; Locke & Bandura. 2003). An individual's belief in their own ability to carry out the behaviors necessary to produce a particular performance achievement (Waddington. 2023).

Bandura (1977) suggests that the concept of self-efficacy has three dimensions: magnitude (or level). strength. and generality. Magnitude refers to how difficult a person finds it to adopt a particular behavior. Strength reflects how confident a person is in their ability to perform a particular task. Generality refers to the extent to which self-efficacy beliefs are positively related. either within a behavioral domain. across behavioral domains. or over time. Self-efficacy is then measured by obtaining ratings of strength. magnitude. and generality.(Schwarzer & Warner. 2013)

d. Response efficacy.

Beliefs about the effectiveness of recommended responses in preventing or avoiding threats.(Yoon et al.. 2022) A person's belief that a recommended action or behavior will effectively reduce or prevent a perceived threat (Zhang et al.. 2022).

Outcome Expectancy Dimension: The core premise that specific behaviors lead to desired and safe outcomes. Action Specific Focus Dimension: Evaluates whether proposed preventive measures (e.g. vaccination. evacuation. recycling) work as expected. Valence Dimension: Can be manipulated or measured as positive (highlighting benefits). absent (neutral baseline). or negative (raising doubt about the effectiveness of the measure) (Yang & Delgado. 2025).

e. Danger control responses.

Beliefs. attitudes. intentions. and behaviors change according to message recommendations (Witte. K.. Meyer. G.. Martell. 2001; Witte. 1994). A deliberate. cognitive. and constructive process. This occurs when a person perceives a significant threat but believes they have high efficacy (a clear ability and steps) to successfully stop or reduce the danger (Ferrara et al.. 2012). A cognitive process in which people evaluate a presented threat (including assessments of the seriousness of the threat and personality vulnerability) and suggested coping responses (including assessments of response effectiveness and self-efficacy) (Ruiter et al.. 2004).

Active Coping Dimension: Focuses on fixing problems and reducing real-world threats. High Efficacy Dimension: Occurs when people believe they are capable of carrying out recommended safety measures. Behavior Change Dimension: Leads to positive actions. habit changes. and acceptance of protective messages (Ruiter et al.. 2004; Witte. 1994).

f. Fear control responses.

Fear-reducing coping responses such as defensive avoidance. denial. and reaction (including downplaying issues and messages and perceived manipulative intentions).(Witte. 1994) Fear-reducing coping responses such as defensive avoidance. denial. and reactance (including downplaying issues and messages and the perception of manipulative intent). An emotional coping process in which a person facing a high level of threat and low personal competence attempts to reduce their internal panic rather than address the actual danger (Ruiter et al.. 2004).

Defensive Avoidance Dimension: Focuses on blocking or denying the fearful message rather than the risk. Low Efficacy Dimension: Occurs

when people feel they cannot stop the danger on their own. Emotional Reaction Dimension: Leads to panic. anger. or denial due to fear. rather than helpful solutions (Ruiter et al.. 2004; Witte. 1994).

Item Response Options

All items were positive. The questionnaire was structured using a Likert scale with five options ranging from 1 = strongly disagree to 5 = strongly agree.

Expert Reviews

To maintain the validity of the questionnaire. content validity was carried out. which can be achieved through expert assessment. Experts assessed the questionnaire design to ensure content validity. This study recruited 10 experts with various relevant scientific backgrounds. The literature recommends a minimum of 5 and a maximum of 10-20 experts to conduct content assessments (Polit et al.. 2007). The experts are 4 lecturers and practitioners of maternity. community. mental health and emergency nursing. 3 lecturers and practitioners of public health in health promotion. health management and public health nutrition and 3 lecturers and practitioners of psychology who work in South Kalimantan.

The questions were organized into subgroups under the headings: Perceived severity. Perceived susceptibility. Self-efficacy. Response efficacy. Danger control responses. and Fear control responses. Of the 60 items included in the questionnaire content review. 10 items were related to Perceived severity. 10 items to Perceived susceptibility. 10 items to Self-efficacy. 10 items to Response efficacy. 10 items to Danger control responses. and 10 items to Fear control responses. Experts were asked to rate the relevance of each item on a four-point scale. namely 1 = not relevant. 2 = less relevant. 3 = quite relevant. and 4 = relevant. The form for experts also includes space for free comments and input on the questionnaire design.

Evaluation of Dimensions and Items

Experts review the items and dimensions listed in the validation form. They evaluate whether each item accurately represents the intended concept and provide suggestions for improvement. After reviewing each item. experts evaluate its relevance to the intended dimension. These ratings must be collected and prepared for further evaluation.

Content validation data is processed using the Content Validity Ratio (CVR) and Content Validity Index (CVI). The CVR and CVI are conducted by requesting expert assessments using a relevance scale. then entering them into a formula for the proportion of experts who agree or are important (Gilbert & Prion. 2016; Prananto et al.. 2022).

Content Validity Ratio (CVR) Evaluation

Brod. Tesler and Christensen (2009) proposed a content validity ratio (CVR) to measure the degree of expert agreement of a single item and which can express the level of content validity through a single indicator ranging from -1 to 1. In this study. to calculate the CVR for each item is an item that is rated by experts as 3 or 4 (3 = item is quite relevant. needs a little revision. 4 = item is relevant) (Brod et al.. 2009; Gilbert & Prion. 2016).

The CVR value is calculated by adding up the experts who rated the item as "quite relevant and relevant" minus the number of experts divided by two and the result is divided by the number of experts divided by two (Prananto et al.. 2022). CVR values range from -1 to +1. Positive values that exceed the minimum limit of the Lawshe table indicate that the item has significant content validity.(Ayre & Scally. 2014) In the Lawshe table the minimum CVR value used with 10 experts is 0.62 (Lawshe. 1975).

Content Validity Index (CVI) Evaluation

After identifying each sub-question of the questionnaire using the Content Validity Index (CVI). the next step is to calculate the content validity index (CVI). The CVI is used to calculate the total number of sub-questions. The CVI is calculated for each item and the questionnaire as a whole (Lawshe. 1975). The CVI is defined as the proportion of experts who rated the question relevant and the inter-rater agreement index. To calculate the CVI for each item. the number of items rated by experts as 3 or 4 (3 = item needs little revision. 4 = item relevant) is divided by the number of sub-questions. As recommended by Polit & Beck (2006) and Polit et al. (2007). the CVI should be 1.00 if the expert panel consists of three to five members. A minimum CVI of 0.83 has been proposed for panels with six or more experts (Delgado-Rico et al.. 2012; Malik & Hasan. 2026). According to Lynn (1986). a

panel of 9 or more experts should have a slightly lower acceptable CVI value. namely 0.78 (Malik & Hasan. 2026). Therefore. this study will use a CVI threshold of 0.78. and items with lower scores will be considered for revision or deletion.

Expert assessment results were collected using a questionnaire content assessment form. Questions were structured based on Perceived Severity. Perceived Susceptibility. Self-efficacy. Response Efficacy. Danger Control Responses. and Fear Control Responses. During the content validity process. experts used the developed measurement domain definitions as a basis for assessing the extent to which items represented the intended measurement domains.

Questionnaire Evaluation Interview

Cognitive interviewing is a recommended method for testing or evaluating questionnaires and focuses on the cognitive processes of respondents (Lenzner et al.. 2023). Interviews were conducted with women of reproductive age aged 19 and above. The age limit of 19 was used in accordance with Indonesian law. which stipulates that the minimum age for marriage is 19 for both men and women (Presiden Republik Indonesia. 2019). Each post-reproductive woman was asked to read the items and provide feedback on the response format. timeframe. question clarity. and general layout. Interviews were conducted with five post-reproductive women from several community health centers and obstetric clinics around Banjarmasin City. Participants were offered an incentive of 50.000 Rupiah via their e-wallet.

Results and Discussion

Results

The results and reviews of 10 experts on 60 statement items divided into 6 dimensions for the diagnostic questionnaire of risky behavior for anemia in women of reproductive age showed that there were 17 items considered for removal. because they had a CVR value below 0.5. each of which was the Perceived severity dimension. there were 3 question items recommended for removal. the Perceived susceptibility dimension. there were 3 question items recommended for removal. the Self-efficacy dimension. there were 2 question items recommended for removal. the Response efficacy dimension. there were 3 question items recommended for removal. the Danger control responses dimension. there were 3 items considered for removal. the Fear control responses dimension. there were 3 items considered for removal. No items were considered for revision. Table 1 shows the content validity index value per item and the content validity ratio.

Questionnaire Interview Evaluation

Interviews were conducted with five women of reproductive age. aged 19 and above. from several community health centers around Banjarmasin City. No improvements were found in the response format. timeframe. question clarity. or general layout. Therefore. the questionnaire can be considered final.

Discussion

Content validity testing resulted in 43 items after being assessed by 10 experts and 5 women of reproductive age who participated in cognitive interviews regarding response format. timeframe. question clarity. and general layout.

The 43-item statements on the Risk Behavior Diagnosis (RBD) scale for anemia in women of reproductive age were divided into six main research dimensions: 7 items on the Perceived Severity dimension. 7 items on the Perceived Susceptibility dimension. 8 items on the Self-Efficacy dimension. 7 items on the Response Efficacy dimension. 7 items on the Danger Control Responses dimension. and 7 items on the Fear Control Responses dimension.

The interview evaluation of the 43-item statements on the Risk Behavior Diagnosis (RBD) questionnaire for anemia in women of reproductive age revealed no improvements in the response format. timeframe. question clarity. or general layout. Thus. the Risk Behavior Diagnosis (RBD) questionnaire for anemia in women of reproductive age has passed all stages of content validity.

With the completion of content validity testing. the Risk Behavior Diagnosis (RBD) questionnaire for anemia in women of reproductive age can be used as the primary subject for further factor analysis. The statement items developed are the result of ongoing research. and it is hoped that this questionnaire will be a robust instrument and can be used elsewhere.

Table 1. Results of Questionnaire Content Review

No	Dimensions and Statements	code	Expert										∑	%	cat	CVI	CVR	Result
			1	2	3	4	5	6	7	8	9	10						
Perceived severity. Likert 5 (strongly disagree – Strongly Agree)																		
1	(Fatality) The thought of anemia scares me	PV1	3	3	4	3	3	3	4	2	3	3	31	70.0	3	1	1	V
2	(Fatality) I am afraid to even think about anemia	PV2	3	2	4	3	4	3	3	4	3	3	32	73.3	3	0.9	0.8	V
3	(Evaluation of medical and clinical consequences) When I think about anemia, I feel nauseous	PV3	3	3	2	4	3	2	3	4	4	3	31	70.0	3	0.8	0.6	V
4	(Evaluation of medical and clinical consequences) When I think about anemia my heart beats faster	PV4	4	3	3	4	4	3	3	3	3	2	32	73.3	3	0.9	0.8	V
5	(Financial/career problems) If I had anemia my career would be endangered	PV5	4	3	4	3	3	2	3	3	4	3	32	73.3	3	0.9	0.8	N
6	(Financial/career problems) My financial security would be endangered if I got anemia	PV6	3	3	3	2	2	4	2	4	3	2	28	60.0	3	0.6	0.2	NV
7	(Possible social consequences) Anemia will jeopardize my marriage (or other important relationships)	PV7	2	2	1	2	3	3	4	3	2	3	25	50.0	3	0.5	0	NV
8	(Possible social consequences) My feelings about myself would change if I got anemia	PV8	3	4	4	3	4	3	3	3	3	3	33	76.7	4	1	1	V
9	(Long-term effects) Anemia is a hopeless disease	PV9	1	1	2	2	2	3	3	3	3	3	23	43.3	2	0.5	0	NV
10	(Long-term effects) The problems I will experience due to having anemia will last for a long time.	PV10	3	3	4	4	3	3	3	3	4	3	33	76.7	4	1	1	V
Perceived susceptibility - Likert 5 (strongly disagree - Strongly Agree)																		
1	(Cognitive assessment) I feel like I might have anemia.	PS1	3	4	3	4	3	3	4	3	3	4	34	80.0	4	1	1	V
2	(Cognitive assessment) Based on my health condition, I am at risk of developing anemia.	PS2	3	4	2	3	4	2	3	4	3	3	31	70.0	3	0.8	0.6	V
3	(Cognitive assessment) My diet and lifestyle may increase my risk of developing anemia.	PS3	3	4	3	3	3	3	3	4	4	3	33	76.7	4	1	1	V
4	(Cognitive assessment) I realized that people with conditions like mine are more prone to anemia.	PS4	3	3	4	3	3	2	2	1	1	1	23	43.3	2	0.5	0	NV
5	(Intuitive judgment) I am worried that one day I might develop anemia.	PS5	3	4	3	3	4	3	3	2	2	3	30	66.7	3	0.8	0.6	V
6	(Intuitive judgment) I have a feeling that I am more prone to anemia than other people.	PS6	3	3	3	4	4	2	4	4	4	1	32	73.3	3	0.8	0.6	V
7	(Intuitive judgment) When I feel my body getting tired or dizzy more easily, I suspect I might have anemia.	PS7	4	2	3	2	3	3	4	4	4	3	32	73.3	3	0.8	0.6	V
8	(The importance of risk) The possibility of having anemia is something that is important for me to pay attention to.	PS8	2	2	1	1	1	3	3	3	3	3	22	40.0	2	0.4	-0.2	NV
9	(The importance of risk) I consider the risk of developing anemia to have a serious impact on my daily activities.	PS9	3	3	4	3	3	3	4	2	3	3	31	70.0	3	0.9	0.8	V
10	(The importance of risk) Knowing my risk level for anemia is important to me.	PS10	3	3	3	4	4	3	3	3	3	3	32	73.3	3	1	1	V
Self-efficacy. Likert scale 1-5 (Very Uncertain – Very Certain)																		
1	(Magnitude/Level)) I am confident that I can consume iron-rich foods every day.	SE1	3	4	3	4	3	4	3	2	4	3	33	76.7	4	0.9	0.8	V

2	(Magnitude/Level) I am confident that I can implement a diet that helps prevent anemia despite having a busy schedule.	SE2	3	3	4	4	3	4	3	4	3	3	34	80.0	4	1	1	V
3	(Magnitude/Level) I am confident that I will be able to take blood supplement tablets as recommended if necessary.	SE3	4	3	2	3	3	2	4	3	3	4	31	70.0	3	0.8	0.6	V
4	((Strength) I remain confident that I can prevent anemia despite facing various obstacles.	SE4	4	3	3	4	4	4	2	3	2	3	32	73.3	3	0.8	0.6	V
5	(Strength) I am confident that I can maintain habits that support anemia prevention in the long term.	SE5	3	4	3	3	3	2	4	4	4	3	33	76.7	4	1	1	V
6	(Strength) I am sure I can find information or help if I have difficulty preventing anemia.	SE6	3	4	3	4	3	3	3	3	3	3	32	73.3	3	1	1	V
7	(Generality) I am confident that I can implement anemia prevention behaviors at home, at school/campus, and at work.	SE7	2	3	3	3	3	3	3	3	2	3	28	60.0	3	0.8	0.6	V
8	(Generality) I am sure that I can still maintain a lifestyle to prevent anemia even if the surrounding environment is less supportive.	SE8	2	2	2	2	2	4	3	2	2	3	24	46.7	2	0.3	-0.4	NV
9	(Generality) I am confident that I can apply anemia prevention efforts in various everyday conditions or situations.	SE9	2	1	1	1	3	3	3	3	3	3	23	43.3	2	0.6	0.2	NV
10	(Generality) I am confident that I can maintain anemia prevention behaviors even if there are changes in routine or activities.	SE10	3	3	3	4	3	4	3	3	3	3	32	73.3	3	1	1	V
Response Efficacy. Likert 1-5 (Strongly Disagree – Strongly Agree)																		
1	(Expected Results) Regularly consuming foods rich in iron can reduce the risk of developing anemia.	RE1	3	4	3	2	3	4	3	3	4	3	32	73.3	3	0.9	0.8	V
2	(Expected Results) Taking iron supplements as recommended is an effective way to prevent anemia.	RE2	3	3	3	3	3	3	3	2	3	3	29	63.3	3	0.9	0.8	V
3	(Expected Results) Regularly checking your hemoglobin levels can help prevent more severe effects of anemia.	RE3	3	4	3	4	3	2	3	4	3	3	32	73.3	3	0.9	0.8	V
4	(Specific Focus of Action) Regularly taking iron supplements is an effective way to maintain normal hemoglobin levels.	RE4	2	3	4	3	4	3	4	3	3	4	33	76.7	4	0.9	0.8	V
5	(Specific Focus of Action) Consuming foods containing vitamin C together with foods that are sources of iron increases the effectiveness of preventing anemia.	RE5	3	4	4	3	3	4	3	3	4	3	34	80.0	4	1	1	V
6	(Specific Focus of Action) Limiting tea or coffee consumption with meals helps iron absorption and can prevent anemia.	RE6	3	3	3	3	4	4	4	3	4	3	34	80.0	4	1	1	V
7	(Specific Focus of Action) Adopting a balanced diet is an effective step in preventing anemia.	RE7	3	3	3	3	3	3	2	3	3	3	29	63.3	3	0.9	0.8	V
8	(Valence) I consider the benefits of taking steps to prevent anemia to outweigh the effort required.	RE8	2	2	1	1	2	2	2	1	1	1	15	16.7	1	0	-1	NV
9	(Valence) I feel that anemia prevention measures provide important benefits to my health.	RE9	2	2	2	2	2	1	2	2	2	1	18	26.7	2	0	-1	NV
10	(Valence) I believe that following the recommendations for anemia prevention is the right decision for me.	RE10	2	2	2	2	1	2	1	1	1	1	15	16.7	1	0	-1	NV
Danger control responses. Likert scale 1-5 (Strongly Disagree – Strongly Agree)																		
1	(Active Handling) I try to eat foods rich in iron to prevent anemia.	DC1	1	3	4	3	4	3	3	4	4	3	32	73.3	3	0.9	0.8	V
2	(Active Handling) I am looking for information on how to prevent anemia from a	DC2	3	2	4	3	3	4	4	3	4	3	33	76.7	4	0.9	0.8	V

	reliable source.																	
3	(Active Handling) I am willing to have my hemoglobin level checked if I feel I am at risk of anemia.	DC3	3	3	3	3	3	3	2	4	3	3	30	66.7	3	1	1	V
4	(High Efficacy) I am confident that I can apply the recommendations to prevent anemia in my daily life.	DC4	3	3	2	3	3	3	3	3	3	3	29	63.3	3	0.9	0.8	V
5	(High Efficacy) I am confident that I can continue to make efforts to prevent anemia despite facing various obstacles.	DC5	1	1	2	2	2	2	2	1	1	1	15	16.7	1	0	-1	NV
6	(High Efficacy) I believe that the actions I take can reduce my risk of developing anemia.	DC6	3	2	1	1	1	1	2	2	2	1	16	20.0	1	0.1	-0.8	NV
7	(Behavioral Change) I have changed my diet to include more iron to prevent anemia.	DC7	4	3	3	3	4	2	1	1	1	1	23	43.3	2	0.5	0	NV
8	(Behavioral Change) I am trying to get used to taking blood supplement tablets as recommended if necessary.	DC8	3	4	2	3	3	4	4	3	4	3	33	76.7	4	0.9	0.8	V
9	(Behavioral Change) I started avoiding habits that can inhibit iron absorption, such as drinking tea or coffee with meals.	DC9	2	3	4	3	4	4	3	4	3	4	34	80.0	4	0.9	0.8	V
10	(Behavioral Change) I am committed to maintaining behaviors that can prevent anemia in the long term.	DC10	3	3	3	4	3	4	4	2	3	4	33	76.7	4	0.9	0.8	V
Fear control responses. Likert scale 1-5 (Strongly Disagree – Strongly Agree)																		
1	(Defensive Avoidance) I tend to avoid information about anemia because it makes me uncomfortable.	FC1	4	3	2	4	3	4	3	4	4	3	34	80.0	4	0.9	0.8	V
2	(Defensive Avoidance) I choose not to think about the possibility of myself having anemia.	FC2	3	4	4	3	4	4	3	2	4	3	34	80.0	4	0.9	0.8	V
3	(Defensive Avoidance) I ignored information about preventing anemia because I felt it was unnecessary to think about it.	FC3	2	4	3	3	4	2	3	4	4	3	32	73.3	3	0.8	0.6	V
4	(Low Efficacy) I find it difficult to take the recommended steps to prevent anemia.	FC4	3	3	3	3	3	3	3	4	3	4	32	73.3	3	1	1	V
5	(Low Efficacy) I feel like my efforts won't do much to prevent anemia.	FC5	2	3	3	3	3	4	4	3	4	3	32	73.3	3	0.9	0.8	V
6	(Low Efficacy) I feel unable to consistently implement the habits necessary to prevent anemia.	FC6	1	2	2	1	3	2	2	3	3	3	22	40.0	2	0.4	-0.2	NV
7	(Emotional Reaction) Information about anemia makes me feel anxious.	FC7	3	3	3	3	3	3	3	3	3	3	30	66.7	3	1	1	V
8	(Emotional Reaction) I feel scared when I imagine the possibility of having anemia.	FC8	3	4	2	2	4	2	4	1	4	4	30	66.7	3	0.7	0.4	NV
9	(Emotional Reaction) I felt overly worried when I heard information about anemia.	FC9	3	4	3	4	3	4	2	2	4	1	30	66.7	3	0.7	0.4	NV
10	(Emotional Reaction) The fear of anemia makes it difficult for me to think clearly about how to prevent it.	FC10	2	4	3	3	3	2	4	4	3	4	32	73.3	3	0.8	0.6	V

Research Limitations

The main limitation of the research findings is that all women of reproductive age involved in the study, which aimed to develop a questionnaire on risk behaviors for anemia in women of reproductive age based on the EPPM, were all university students. Therefore, the entire questionnaire only reflects the level of thinking that characterizes an educated society. Further research is needed regarding risk behaviors for anemia in women of reproductive age in a broader and more diverse society.

Conclusion

The Risk Behavior Diagnosis (RBD) questionnaire for anemia in women of reproductive age can be used in public health, midwifery, nursing, medicine, and psychology. The questionnaire will help health workers understand the behaviors of women of reproductive age that influence their decisions about anemia prevention and can help them design more effective health communication strategies.

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