Genetics and Genomics in Nursing Practice Survey Instrument Scoring Manual

Introduction:

The Genetics and Genomics in Nursing Practice Survey **(**GGNPS) is a discipline specific derivative of a validated instrument originally designed to assess family physician factors influencing genetic/genomic competency (Jenkins, Woolford, Stevens, Kahn, McBride, 2010). The original family physician instrument was designed to measure the following Rogers Diffusion of Innovations (DOI) (Rogers, 2003) domains: attitudes, receptivity, confidence, knowledge and competency, decision on adoption, as well as the social system that influences those domains. The instrument was validated using structural equation modeling (SEM) to ascertain whether the items aligned with the DOI domains and the direction of the association. These findings indicated that the family physician survey items adequately aligned with the DOI domains. The GGNPS is a modified version of the original instrument in the context of nursing practice. The GGNPS includes eight sections that cover the following domains: attitudes, receptivity, confidence, social system, and adoption. Instrument question types include select all that apply pick lists, multiple choice, yes/no, true/false, and Likert scales.

Administration:

The GGNPS can be administered online or in paper format. Both administration methods have been used in studies utilizing this instrument (Calzone, et al., 2014; Calzone, Jenkins, Culp, Bonham, Badzek, 2013).

Scoring:

Items from the attitudes, receptivity, confidence, social system, and adoption domains are analyzed individually and are not combined to form scores. The responses to 12 items (Table 1) measuring genomic knowledge are combined to form a knowledge score. Reponses to each of the 12 items are first graded as correct or incorrect, and a total knowledge score is calculated as the number of correct responses out of 12, with a minimum possible score of 0 and a maximum possible score of 12. Calculation of the total knowledge score is restricted to individuals responding to all 12 items.

References

Calzone, K., Jenkins, J., Yates, J., Cusack, G., Wallen, G., Liewehr, D., Steinberg, S., McBride, C. (2012). Survey of nursing integration of genomics into nursing practice. *Journal of Nursing Scholarship, 44*(4), 428-436.

Calzone, K. A., Jenkins, J., Culp, S., Bonham, V.L., Badzek, L. (2013). National Nursing workforce survey of nursing attitudes, knowledge and practice in genomics. *Personalized Medicine, 10*(7), 719-728.

Jenkins, J., Woolford, S., Stevens, N., Kahn, N., McBride, C.M. (2010). Family physicians' likely adoption of genomic-related innovations. *Case Studies in Business, Industry and Government Statistics, 3*(2). http://www.bentley.edu/csbigs

Rogers, E. (2003). *Diffusion of Innovations* (5 ed.). New York: The Free Press.

Table 1: Total Knowledge Score Items

Item Number	Item	Correct Response	Incorrect Response
P2-2a	A family history that includes only 1st degree relatives such as parents, siblings, and children should be taken on every new patient.	Disagree [P2-2a1]	Agree [P2-2a0]; Don't Know [P2-2a2]
P2-2b	A family history that includes 2nd and 3rd degree relatives such as grandparents, aunts, uncles, and cousins should be taken for every new patient.	Agree [P2-2b0]	Disagree [P2-2b1]; Don't Know [P2-2b2]
P2-2c	Family history taking should be a key component of nursing care.	Agree [P2-2c0]	Disagree [P2-2c1]; Don't Know [P2-2c2]
P2-2d	There is a role for nurses in counseling patients about genetic risks.	Agree [P2-2d0]	Disagree [P2-2d1]; Don't Know [P2-2d2]
P4-1a	Do you think that genetic risk (e.g., as indicated by family history) has clinical relevance for breast cancer.	Somewhat [P4-1a1]; A Great Deal [P4-1a2]	Not at All [P4-1a0]
P4-1b	Do you think that genetic risk (e.g., as indicated by family history) has clinical relevance for colon cancer.	Somewhat [P4-1b1]; A Great Deal [P4-1b2]	Not at All [P4-1b0]
P4-1c	Do you think that genetic risk (e.g., as indicated by family history) has clinical relevance for coronary heart disease.	Somewhat [P4-1c1]; A Great Deal [P4-1c2]	Not at All [P4-1c0]
P4-1d	Do you think that genetic risk (e.g., as indicated by family history) has clinical relevance for diabetes.	Somewhat [P4-1d1]; A Great Deal [P4-1d2]	Not at All [P4-1d0]
P4-1f	Do you think that genetic risk (e.g., as indicated by family history) has clinical relevance for ovarian cancer.	Somewhat [P4-1f1]; A Great Deal [P4-1f2]	Not at All [P4-1f0]

P4-3b	Extent to which family history supports clinical decisions (such as administering drugs prescribed).	Essential [P4-3b2]	Not at All [P4-3b1]; Don't Know [P4-3b3]
P5-1	The DNA of sequences of two randomly selected healthy individuals of the same sex are 90-95% identical.	False [P5-1a1]	True [P5-1b0]; Don't Know [P5-1c999]
P5-2	Most common diseases such as diabetes and heart disease are caused by a single gene variant.	False [P5-2b1]	True [P5-2a0]; Don't Know [P5-2c999]

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