

The Relationship Between Depression Scores and Readmission Rates in CHF Patients

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BACKGROUND

- 5-6 million Americans suffer from CHF (Heidenreich, et al., 2011).
- 60% of those patients suffer from depression.
- Depression often leads to an increase in complications and non-compliance to:
 - * prescribed medications
 - * lifestyle modifications
 - * follow-up cardiac testing (Barnett, et al., 2012)
- A decline in patient condition causes an increase in hospital usage (Barnett, et al., 2012).
- Sub-clinical depression symptoms elevate the risk for future cardiac events and readmission to the hospital.

RESULTS

Summary: Patients who screened positive for depression on admission to the hospital were at greater risk for being readmitted within 30 days.

Summary: There were an abnormally high number of patients with a depression score of "0". This suggests that further education is needed on how to complete depression screening and a re-emphasis on why depression screening is important.

Research Question 1: Determine if a significant correlation existed among CHF patients between a positive depression screening on the PHQ-9 and an increased readmission rate to the hospital.

Findings: The correlation between depression level (mild, moderate or severe) and readmission status (no readmission, 60 day or 30 day) was statistically significant (Spearman Correlation = .549, $p < .001$) with the more depressed patients more likely to be readmitted.

Research Question 2: Were CHF patients who had a positive depression screening more likely to be readmitted to the hospital within 30 days than patients who do not have a positive depression screening?

Findings: Similarly, the Chi-Square Likelihood Ratio was significant ($X^2 = 82.315$, $p < .001$) indicating that a patient with a positive depression screening was more likely to be readmitted.

Research Question 3: Did the readmission rate increase when extended to 60 days?

Findings: An additional 11 patients had a first readmission during days 31 to 60. This increased the overall percent readmitted by an additional 3.5% for a total readmission percentage of 16.1% by 60 days post discharge.

Research Question 4: The PHQ-9 categorizes the scores into mild, moderate, or severe depression. At which level of depression did a correlation for readmission exist, if any?

Findings: 54.7% of the patients (173/316) had a score of "0" for their PHQ-9 during their original admission. It is unclear whether these zeroes reflect no symptoms of depression or whether the scale was not administered. Patient records with the PHQ-9 score missing were eliminated, however, since the possible range of scores for the PHQ-9 is 0-20, zeroes are possible and must be retained. Because of this issue, a definitive answer could not be determined. However, as the depression scores went from the category of mild to moderate to severe, there was a progressive increase in the percent of patients readmitted.

NURSING IMPLICATIONS

Practice

- Patients should be screened for depression upon admission
- Resources should be established and put in place both during hospitalization and after discharge.
- Communicate across the continuum of care
- The primary care provider should validate the preliminary findings of depression upon follow-up to the clinic after discharge and be informed of resources provided to patient.

Education

- Educate nursing and patient's on the importance of screening and its benefit to the patient, the perception of the behaviors of a patient with depression, and the correct way to administer the tool without bias.

Policy

- A list of required resources will be applied to each patient based on their depression score prior to discharge

Research

- Repeat the study after nurse's education is complete to determine if PDH-Q zero scores diminish and/or if there is a different relationship between depression scores and readmission rates.
- Evaluate what interventions are effective in managing depression when a patient tests positive for depression at the mild/moderate PHQ-9 score (5-14) and the severe PHQ-9 score (>14).

RESEARCH STUDY AND PURPOSE

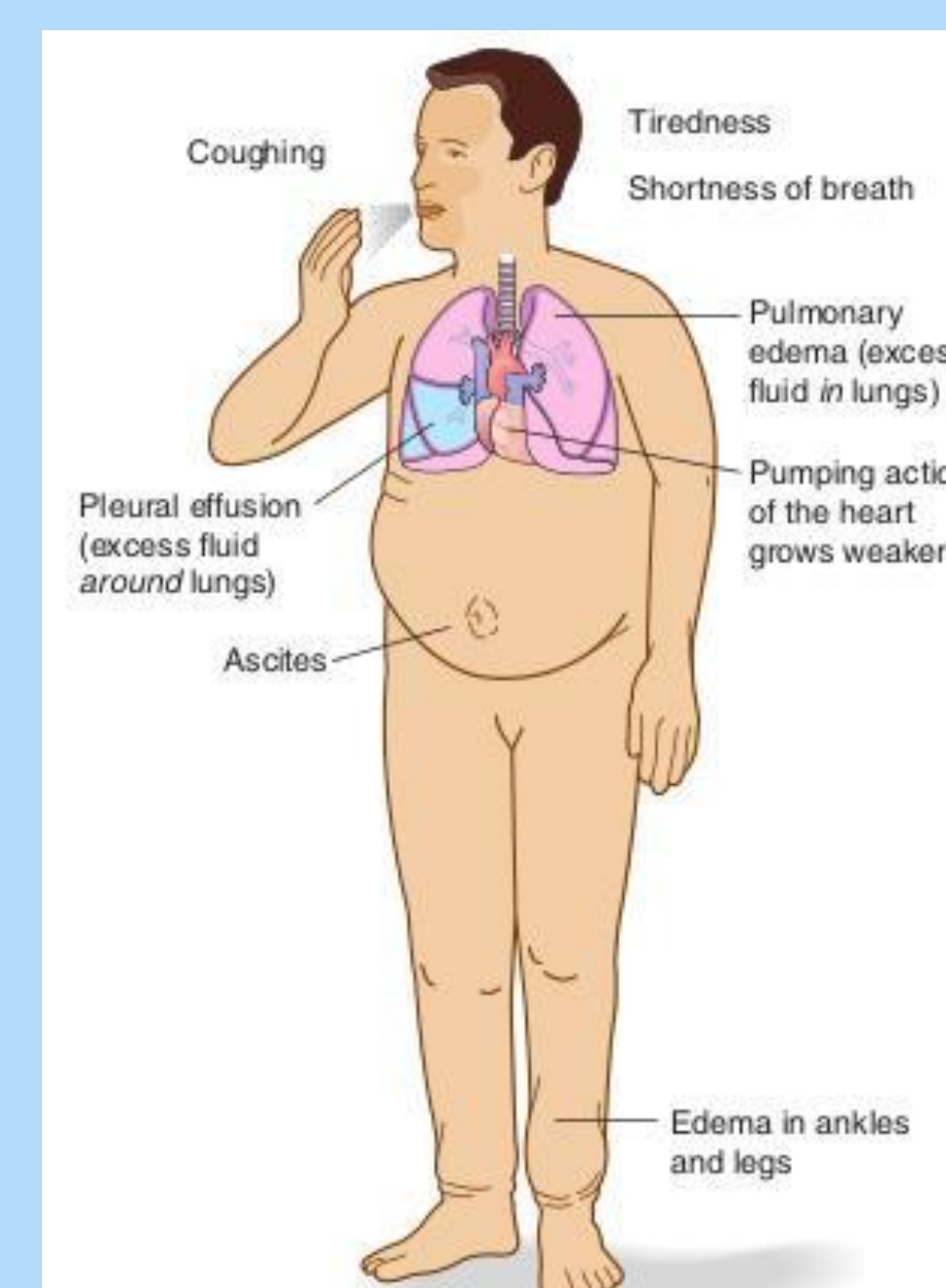
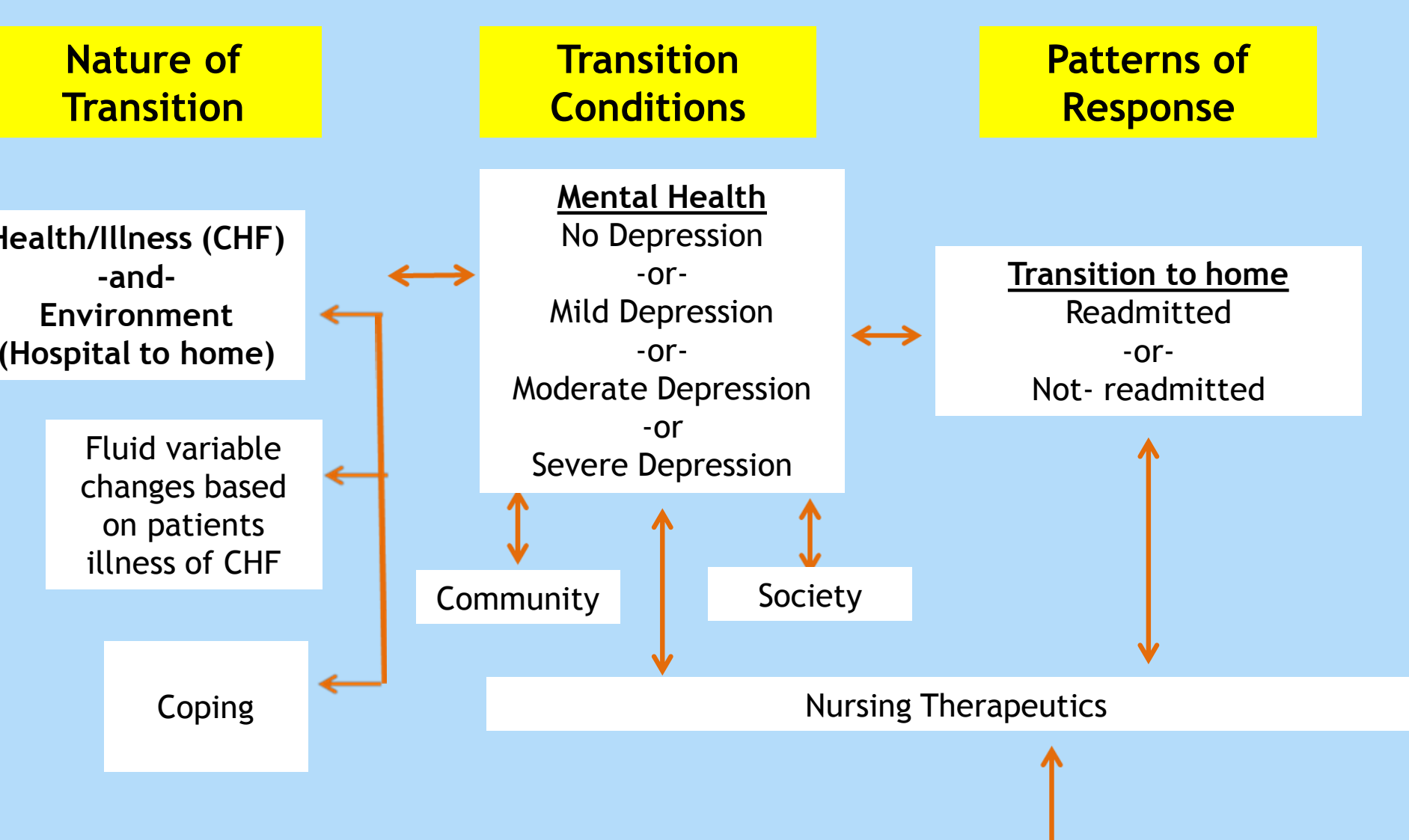
Purpose: To identify the effect depression has on readmission rates for patients with CHF

RESEARCH METHODOLOGY

A descriptive, quantitative, retrospective chart review was completed over a six month period including all patients who were admitted with a diagnosis of CHF.

All patients who were admitted to the hospital were screened for depression and monitored for readmission for 60 days after discharge.

- * The independent variable included the depression score on the PHQ 9.
- * The dependent variable was readmission to the hospital within 30 days and 60 days.



| PHQ-9 Level of Depression | First Readmission N=316 | | |
|---------------------------------------|-------------------------|---------------------|---------------------|
| | Not Readmitted | 30 Day Readmissions | 60 Day Readmissions |
| Minimal Depression (PHQ-9: 0-4) | 244 (93.1) | 12 (4.6) | 6 (2.3) |
| Mild/Moderate Depression (PHQ-9 5-14) | 21 (41.2) | 25 (49.0) | 5 (9.8) |
| Severe Depression (PHQ-9 15-27) | 0 (0.0) | 3 (100.0) | 0 (0.0) |
| Total | 265 (83.9) | 40 (12.7) | 11 (3.5) |

CONCLUSION

The effective utilization of depression screening may be expanded to other disease processes to help our community as a whole.

Information gathered from this data could also support the development of a depression care team for those who screen positive for depression.

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