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Predictors of Adolescents Attitudes Towards Hepatitis C

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Introduction

- Hepatitis C an important public health issue in our community. Approximately 220,000 people are currently living with the hepatitis C virus nationwide which includes approximately including 48 000 people with moderate to severe liver disease. There are approximately 11,000 diagnoses per year in Australia (The Kirby Institute, 2011).

- In Australia one person is exposed to hepatitis C every hour of every day.

- Attempts to address this issue, increase awareness, and change attitudes towards hepatitis C in the community have been limited. Previous Hepatitis C campaigns and education programs have focused on messages filled with factual information (cognitions) about hepatitis C with the aim of increasing awareness and reducing hepatitis C risk behaviours (Brown, Perlmutter & McDermott, 2000; Munoz-Plaza, Strauss, Astone, Jarlais & Hagan, 2004).

Introduction

- Hepatitis C prevention and education efforts seem to have had little effect in increasing knowledge and changing attitudes, particularly among some of the target groups such as *people who inject drugs* (account for 80-90% of hepatitis c diagnoses) and *young people* (age of onset for engaging in hepatitis c risk behaviours - tattooing, piercing, injecting drug use, majority of hepatitis C diagnosis occur in the 20-29 year age group).

- A majority of Australians hold little hepatitis C knowledge and have previously engaged in hepatitis C risk behaviours (Lin et al., 2005; Balfour et al., 2009; Bryant, et al., 2010) in particular previous research shows adolescents hold incorrect beliefs toward hepatitis C and have extremely poor hepatitis C knowledge (Lindsay, Smith & Rosenthal, 1999). There are also similar findings of lack of hepatitis C knowledge among people who inject drugs (Stein, Maksad & Clarke, 2001; Doab, Treloar & Dore, 2005; O'Brien, Day, Black, & Dolan, 2008). In some cases when people who inject drugs were informed of their hepatitis C positive status there was little change in attitudes or the adoption of harm reduction practices (Ompad, Fuller, Vlahov, Thomas & Strathdee, 2002).

- These findings suggest that providing hepatitis C information alone may not be sufficient in increasing knowledge, changing attitudes, or promoting behaviour change (Plaza, Strauss, Astone, Jarlais & Hagan, 2004).

Introduction

- Previous studies and reports have recommended that hepatitis C education and prevention campaigns focus on other aspects of attitude to be more effective (Lindsay, Smith and Rosenthal 1999; Plaza et al., 2004; Doab, Treloar & Dore, 2005).
- Specifically to include the role of relationships, feelings and values, and not only the role of cognitions through provision of knowledge (Lindsay et al., 1999). Successful health campaigns have included the role of affect (emotion) along with cognitions, as a way to increase knowledge and change attitudes towards various health issues rather than limiting to the provision of cognitive information (Menon, Block & Ramanathan, 2002; Lai, 2003; Ingrand, Verneau, Silvain & Beauchant, 2004)
- To gain a better understanding of the role of affect and cognition, we turn to the literature on attitude formation.
- A growing number of studies have focused on the role of attitudes toward certain health behaviours. Specifically looking at the components that form an attitude and investigating the influence these components have on an individuals attitude towards a certain health behaviour.

Introduction

- It is argued that attitudes are formed based on one or a combination of cognitive information (beliefs), affective information (emotions) and (past or intended) behavioural processes. This is referred to as the tripartite model of attitude and has been used to predict the way in which attitudes are formed (Zanna & Rempel, 1988).
- The tripartite model of attitude formation has been supported by previous research and has been applied to various issues and areas such as capital punishment (Haddock & Zanna, 1998), social groups and social policies (Eagly, Mladinic & Otto, 1994) environmental education (Pooley & O'Connor, 2000); palliative care (Cohen, O'Connor & Blackmore, 2002), sexual health practices (Dougall, Cohen, & Guilfoyle 2006) and exercise participation (Brand, 2006).
- Findings from these studies not only provide further support for Zanna and Rempel's (1988) theory of attitude formation but also acknowledges the value of incorporating cognitive and emotional aspects in health promotion programs which may increase their effectiveness in influencing behaviour change. Zanna and Rempel's (1988) model is yet to be applied to hepatitis C.

Introduction

- The proposed study has applied Zanna and Rempel's (1988) tripartite model of attitude to the area of hepatitis C. Previous studies have investigated individual's lack of hepatitis C knowledge and focused on the role of cognitions on attitude, yet little research has been conducted considering the role of affect (emotions) on attitude toward hepatitis C. Little is also known about the beliefs and emotions adolescence hold toward hepatitis C. Furthermore, there is a lack of recent research investigating adolescent's knowledge of hepatitis C, particularly in Western Australia (WA). This is particularly important as WA has one of the highest rates of new hepatitis C infections per capita (National Centre in Epidemiology and Clinical Research, 2005). The aim of proposed study was to investigate the predictors of adolescent's attitudes toward hepatitis C .

- The research questions were:

  1. What are adolescents (14-18 years of age) knowledge of hepatitis C ?

  2. Is it the role of beliefs (cognition), emotions (affect), or both that predict adolescents' attitudes towards hepatitis C .

  3. What beliefs and emotions are generated by adolescents regarding hepatitis C ?

Research Design

Participants

- 98 adolescents recruited from 3 high schools in Perth.
- Males (45) and females (53)
- Aged between 14 and 18 years of age (M = 27, SD = 6)

Methodology

- Quantitative design was used to determine the sources of information on which attitudes toward hepatitis C were formed.
- Data was collected through the use of the free response methodology which asked participants to rate their own nominated beliefs and values toward hepatitis C

Research Design

Materials

- A self reported questionnaire was utilised to identify the sources of information on which attitudes toward hepatitis C were based.
- The self reported questionnaire had been used in other studies investigating predictors of attitudes.
- The questionnaire consisted of 5 tasks all related to hepatitis C . Task 1 questioned participants on their hepatitis C knowledge. Task 2 asked participants to rate their attitude towards hepatitis C . A 7-point Likert scale was used. Task 3 and Task 4 invited participants to list and rate their beliefs and emotions toward hepatitis C . Lastly, Task 5 asked participants to nominate whether their feelings or beliefs influence their attitude toward hepatitis C .
- Basic demographic information (age and gender) were also collected.
- The questionnaire was scored as follows; for the knowledge and attitude scales, scores were taken directly from the score given to both variables response toward hepatitis C . Scores for emotions and beliefs were obtained my averaging each participant’s response.

Research Design

Procedure

- Ethics approval granted.
- Information letter requesting support and assistance with this study was sent to the principal of 8 schools close to the researchers residence.
- Once school support was granted, students in Grades 10, 11 and 12 were invited to voluntarily participate in this study.
- The researcher attended the school to provide students with information about the study and to discuss their involvement as a participant.
- Students interested in participating were provided with an information sheet and consent form.
- Due to the nature of the sample (young people) a similar information sheet and consent form was also provided for the guardian/parent of each of the participants which required signature.
- Only participants with both a signed participant and signed guardian/parent consent form were permitted to participate in this study.
- Researcher returned to the school a week later to administer the self reported questionnaire to those participants with signed consent forms. Following completion of questionnaire, participants were given the opportunity to ask questions or raise any issues regarding the study with the researcher. School psychologist details were also provided to participants.

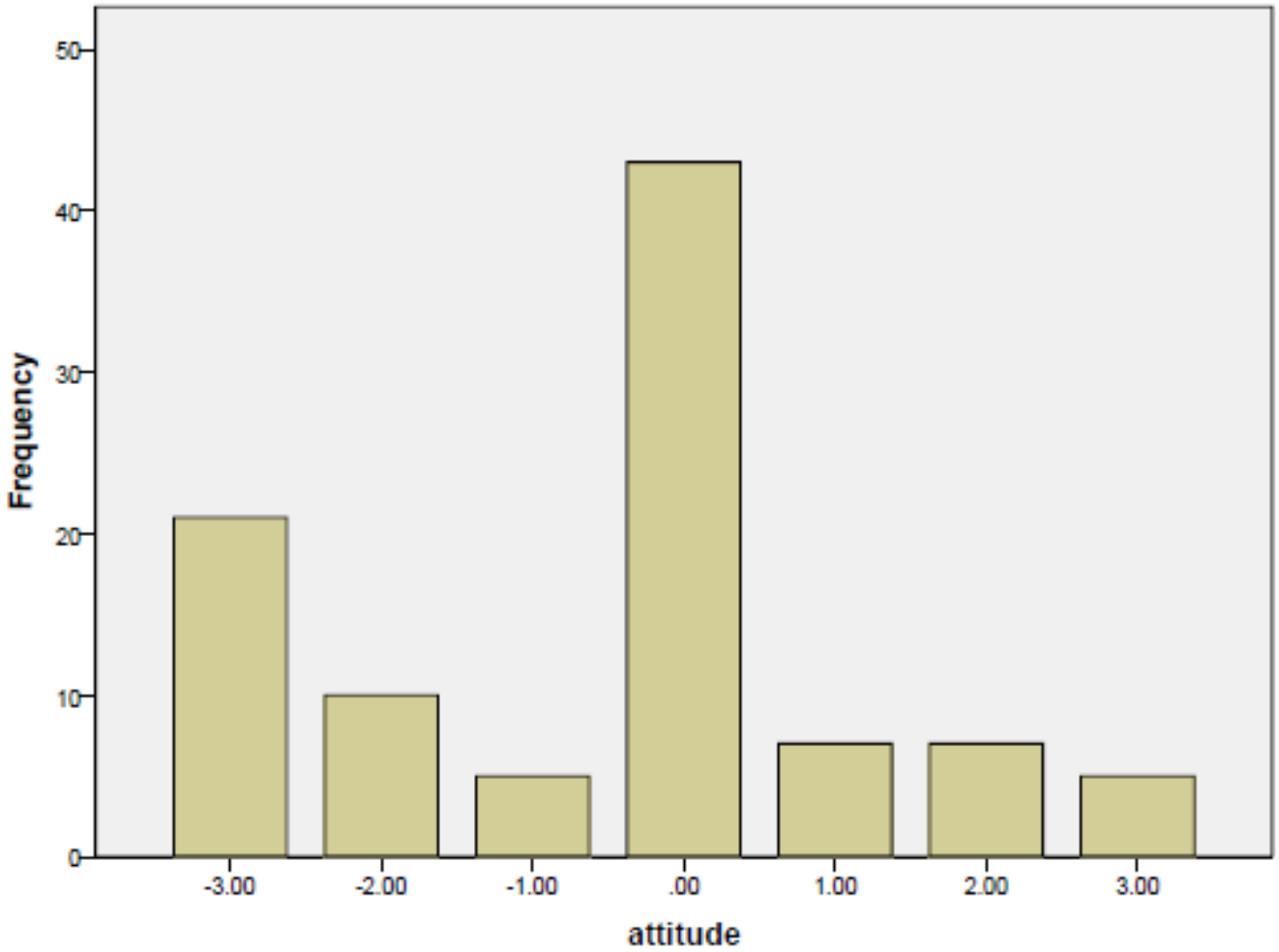
Findings - Attitudes towards hepatitis C

What were the hepatitis C attitudes of adolescents in this study?

- Attitudes towards hepatitis C were slightly negative with a **mean** of -.53 (***SD*=** 1.71). The emotions generated by participants were very slightly negative with a mean of -0.07(***SD*=** 1.65) and generated beliefs were slightly positive with a mean of 0.68 (***SD*=** 1.77).

- Questions regarding attitude, emotions and beliefs were measured on a continuum from –3 (unfavourable) to +3 (favourable) scale. Using a continuum like this is considered an adequate measure of attitudes (Steiner and Norman, 1995).

Findings - Attitudes towards hepatitis C



Findings – Correlations between attitude, emotions & beliefs

- Correlations were examined between attitude, emotion and belief scores.
- There was a weak, positive correlation between attitudes and beliefs, which was statistically significant ($r = .280$, n = 98, $p < .001$).
- A statistically significant correlation was found between beliefs and emotions yielding a moderate, positive effect size (.388) which suggests that as favourable beliefs toward hepatitis c increase so do favourable emotions.
- A statistically significant weak, positive correlation (.214) was also found between hepatitis C attitude and total knowledge score which suggests increases in hepatitis C knowledge are slightly correlated with increases in a favourable attitude toward hepatitis C.
- There was a very weak positive correlation (.18) between attitudes and emotions which was not significant.

Findings – Predictors of Attitude

Did beliefs or emotions significantly predict adolescents attitudes towards hepatitis C?

- Standard multiple regression analysis was performed to identify the role of beliefs and emotions to hepatitis C attitude. The results indicated that beliefs (cognition) significantly predicted attitude towards hepatitis and the two predictors (emotions and beliefs) explained 8% of the variance.

What did participants think informed their attitude toward hepatitis C – beliefs or emotions?

- Participants were asked to indicate whether their emotions (affect) or beliefs (cognition) influence their attitude toward hepatitis c. A significant difference $\chi 2$ (2,n = 98) = 37.7, p = .000. between affect and cognition with more participants nominating affect (N = 53) as influencing their attitude towards hepatitis C.
- This finding differs to the results from the analysis of participants emotions and beliefs where beliefs were identified as the significant predictor of attitude towards hepatitis C.

Findings –
Self reported beliefs and emotions generated by adolescents

Participants reported a total of 322 beliefs, and 338 emotions. Content analysis allowed for further investigations and responses were grouped into 59 beliefs and 54 emotions. Summaries of the most prominent emotions and beliefs are provided below .

Content Analysis for Emotions Generated by Participants Regarding Hepatitis C

Emotions	Response Frequency	Percent of Total Responses
Angry	11	3.29%
Sorrow/Sorry	13	3.89%
Annoyed	14	4.19%
Confused	15	4.49%
Neutral/Normal/Ok	15	4.49%
Worried/concerned	15	4.49%
Happy	20	5.98%
Scared	21	6.28%
Sad	49	14.67%
Total	**173**	**51.77%**

Findings – Self reported beliefs and emotions generated by adolescents

Content Analysis for Beliefs Generated by Participants Regarding Hepatitis C

Beliefs	Response Frequency	Percent of Total Responses
People/adolescents don't know enough about it/there is not enough knowledge	8	2.50%
It is unclean/dirty	8	2.50%
Peoples blood should be tested regularly / blood should be tested	8	2.50%
Some people deserve it/it is the persons own fault	9	2.82%
Hepatitis C is transferred mainly through injecting drugs/sharing needles/doing drugs	9	2.82%
People with it should see a doctor/seek help/should be support for people	9	2.82%
We have to be careful/watch out/be safe (not to get HCV)	10	3.13%
Hepatitis C is life threatening/you can die/can kill you	11	3.44%
Hepatitis C is a very dangerous thing/bad virus	11	3.44%
people shouldn't be judged/should not be treated differently/not their fault	24	7.52%
Everyone/students/people need education/need to know more about it/need to be aware	67	21.00%
Total	**174**	**54.49%**

Findings - Hepatitis C Knowledge

How much or little did participants know about hepatitis C?

- Participants in the study had minimal hepatitis C knowledge with only four from ten questions answered correctly by more than half of the participants.

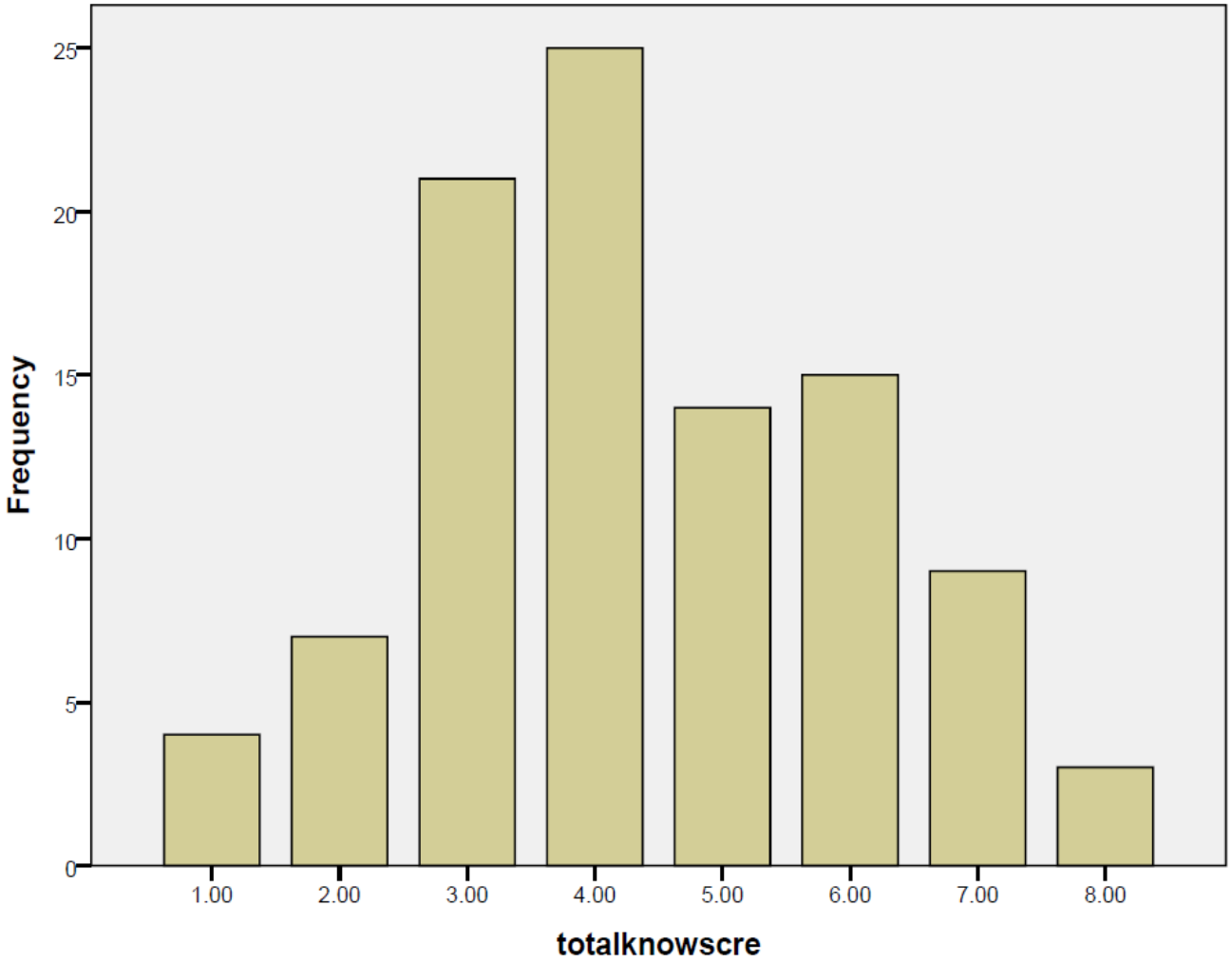
- Only 24% of the sample knew that there was no vaccine for hepatitis C

- 40% grouped hepatitis C as a sexually transmitted disease rather than a blood borne virus.

- 51% were not aware or not sure that receiving a tattoo poses a hepatitis C transmission risk

- Encouragingly 82% of participants were aware that hepatitis C is transmissible through injecting drug use.
- On average participants were able to answer 4 of 10 questions correctly. None of the participants answered all the questions correctly (one was the lowest score and eight was the highest score).
- Overall, these findings of lack of hepatitis C knowledge among adolescents supports the related research presented in the literature review (reference knowledge studies).

Findings - Hepatitis C Knowledge Scores (n=98)



Findings - Hepatitis C Knowledge

How did participants rate their own knowledge of hepatitis C?

- Participants were also asked to rate their hepatitis C knowledge on a 5 point likert scale (None/ Minimal/ Moderate /High/Very High). A majority of responses (61%) of the sample reported their hepatitis c knowledge as minimal.
- This provides support for the conclusions drawn from the hepatitis C knowledge questions which found that participants in this study had minimal hepatitis C knowledge. Interestingly none of the participants rated their hepatitis C knowledge as high or very high suggesting that participants were aware that they were not well informed about hepatitis C.

Findings - Hepatitis C Knowledge

Was there any difference in hepatitis C knowledge scores and participants age?

- There was no statistically significant difference in participants knowledge scores and their age (enterChisquaresymbol)2 (4, *n* = 98) = 5.61, *p* = .230.
- Previous literature has found that older adolescents tend to fare better in terms of hepatitis C knowledge when compared to younger adolescents (enter reference here).
- However the knowledge vs age result in this study needs to be considered with caution as there was not an equal representation of ages among the sample (10:14yrs, 12:15yrs, 44:16yrs, 29:17yrs,3:18yrs)

Conclusions

Overall the study was successful in:

- Identifying predictors of adolescents attitudes towards hepatitis C. With regards to hepatitis C, 8% of the variation in attitude could be explained by beliefs and emotions. However attitude toward hepatitis C was significantly predicted by cognition (beliefs). Interestingly when participants were asked which was most important to their attitude toward hepatitis C there was a significant difference between cognition and affect with more participants nominating affect as influencing their attitude towards hepatitis C. These differing results suggest that attitudes towards hepatitis C may be based on different sources of information (beliefs and emotions).
- Providing further support for Zanna and Rempel's (1988) model of attitude formation, in particular that an attitude need not be based on all three elements (cognition, affect, and behavior).
- Assessing adolescents knowledge of hepatitis C. Hepatitis C knowledge among the adolescent sample was minimal. Current hepatitis C prevention efforts are not effective and considering the rate of hepatitis C notifications, more needs to be done to reduce incidences of this preventable virus. Innovative education programs incorporating both cognitive and affective elements need to be considered to increase the knowledge and awareness of hepatitis C among adolescence.

Conclusions

Overall the study was successful in:

- Investigating adolescents attitudes toward hepatitis C and identifying the associated emotions and beliefs generated by adolescents. Participants were able to generate an array of emotions and beliefs. Attitudes towards hepatitis C were slightly negative as were their emotions. Beliefs generated by participants were slightly positive. There is a need for more focus on not only increasing hepatitis C knowledge but also reducing the negative attitudes people have regarding hepatitis C.

- Investigating the links between emotions, beliefs, knowledge and attitude toward hepatitis C. The results from the correlations were interesting. There was a moderate, positive correlation between beliefs and emotions which suggests that as favourable beliefs toward hepatitis c increase so do favourable emotions. This correlation also highlights the association between emotions and beliefs and how each one influences the other. This has implications for education campaigns which may benefit from incorporating both cognitive and affective elements.

- There was also a statistically significant positive correlation between hepatitis C attitude and knowledge scores which suggests increases in hepatitis C knowledge are slightly correlated with increases in a favourable attitude toward hepatitis C. This provides all the more reason to focus on increasing the publics knowledge of hepatitis C as it may lead to a more positive or favourable attitude towards hepatitis C.

Conclusions

Possible limitations and suggestions for future research:

- Some adolescents had difficulty differentiating between an emotion and a belief “I feel sorry for people” *and* “im not sure how i feel”. Perhaps providing further clarification regarding emotions and beliefs would have assisted. Also it may be that students were confused between the two because they may not have heard of hepatitis C before.
- The third element of the tripariate model - role of past and intended behaviour - was not examined in this study.
- Difficult to compare hepatitis C knowledge among previous studies as knowledge was measured in different ways and with different questions.
- The representativeness of the sample in terms of adolescents ages. It would be good to replicate this data with a larger and more equal sample of adolescents from each age group.

References

- Please email magdalena.sotiroski@gmail.com for a list of references referred to in this presentation.