INSTRUCTIONAL DESIGN AND ASSESSMENT

Consumer-led Mental Health Education for Pharmacy Students

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Objective. To evaluate a consumer-led teaching intervention to reduce pharmacy students' stigma towards depression and schizophrenia, and improve attitudes toward providing pharmaceutical care for consumers with mental illness.

Design. Third-year bachelor of pharmacy degree students were given a series of mental health lectures, undertook supervised weekly placements in the community pharmacy setting, and attended a tutorial led by trained mental health consumer educators.

Assessment. A previously validated 26-item survey instrument was administered at baseline, 6 weeks postintervention, and 12 months postintervention, and 3 focus groups were conducted. Survey instruments were completed by 225 students at baseline, 230 students postintervention, and 228 students at 12 months. Students' stigma decreased ($p < 0.05$) and their attitudes toward the provision of pharmaceutical services to consumers with a mental illness showed significant improvements ($p < 0.05$). These improvements were maintained at the 12-month follow-up. Four themes emerged from the focus groups: knowledge and experience of mental illness, mental health stigma, impacts on attitudes and self-reported behavior, and the role of the pharmacist in mental healthcare.

Conclusions. Consumer-led education for pharmacy students may provide a sustainable reduction in stigma and improve attitudes towards providing pharmaceutical services to consumers with a mental illness.

Keywords: consumer, attitude, stigma, depression, schizophrenia, mental health, pharmacy student

INTRODUCTION

Mental health stigma is commonly cited as the main barrier to people receiving effective mental health care.¹⁻³ The stigma of mental illness is described as a negative attitude based on prejudice and misinformation triggered by a marker of illness.¹ Stigma can come from health care professionals as well as the public and can lead to a person's reluctance to seek help when mental health symptoms first appear.⁴

Medications are the major modality of treatment for most mental illnesses. In the United States, the number of people aged 6 years and older treated with an antidepressant during a calendar year increased from 13.3 million in 1996 to 27 million in 2005.⁵ In Australia more than 11% of prescriptions were mental health related in 2007-2008.⁶

Pharmacists are frequently consulted for advice on psychotropic medications and there is consumer demand

for advice on the use of these medications.^{7,8} Medication counseling provided by pharmacists improves adherence to medications used for mental illnesses,^{9,10} and pharmacist-led medication reviews may help identify and resolve psychotropic medication-related problems.¹¹ Pharmacists are among the most accessible health professionals. However, mental health stigma and lack of knowledge of mental illness can interfere with their professional practice.^{7,12} For example, pharmacists are more confident in providing pharmaceutical services for patients with a cardiovascular illness than for those with a mental illness.¹² Also, pharmacists have negative beliefs about depression similar to those held by the general population¹³ and sub-optimal attitudes towards mental illness are common among health care professionals in general.¹⁴ Patients with mental illness are often dissatisfied with the quality and quantity of drug information provided to them.⁷

The lack of mental health pharmacy education has been described as the main barrier to successful provision of pharmaceutical services for consumers with a mental illness.¹⁵ The World Health Organization recognizes that good communication skills are essential for all health care

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workers engaged in mental health care.¹⁶ The Australian Pharmacy Council (APC) developed a set of professional capabilities expected of pharmacists in the provision of mental health care. This capability statement is used to guide the mental health content of pharmacy programs at universities around Australia and New Zealand, and is used during the accreditation process of university programs.¹⁷

There is growing support, both nationally and internationally, for consumer participation in mental health care, and the World Health Organization has recognized the importance of including consumers in the development of mental health education.^{18,19} A consumer educator in mental health care is a person who has previously received mental health care and works, often on a voluntary basis, to inform and educate professionals, students, and the wider community on mental illness and its effects on individuals, families, and society. A survey of 16 European pharmacy schools revealed that less than half included consumer-led education related to mental health in their curriculum.²⁰

We have shown that developing partnerships between mental health consumers and pharmacists improves pharmacists' confidence in dealing with these consumers.²¹ Studies using mental health consumers as providers of education for pharmacy students have demonstrated the benefit in reducing mental health stigma and improving attitudes.²¹⁻²² However, these studies have only reported evaluations conducted immediately after the intervention and have not investigated the long-term impact of consumer participation in mental health pharmacy education.

The aim of this study was to evaluate the impact of a consumer-led teaching intervention on pharmacy students' mental health stigma and attitudes toward providing pharmaceutical care for consumers with a mental illness over a 12-month period. The null hypothesis was that the teaching intervention involving consumer educators would have no impact on the mental health stigma and attitudes of pharmacy students towards providing pharmaceutical care for consumers with a mental illness.

DESIGN

All third-year pharmacy students (n=258) enrolled in a 4-year bachelor of pharmacy degree program at The University of Sydney, Australia, in 2008, were invited to participate in the study as education specifically related to mental health and psychotropic medications is provided during the third year of the degree program. Due to the benefits demonstrated in our previous nonrandomized, clustered, comparative trial of consumer participation in mental health pharmacy education,²¹ we were ethically obliged to provide the consumer-led intervention to all third-year students. While this meant that our study did not include a comparison group, the objective was to de-

termine whether improved attitudes following consumer participation persist over time. The study was approved by The University of Sydney Human Research Ethics Committee.

The students were given a series of mental health lectures, undertook supervised weekly placements in the community pharmacy setting, and attended a tutorial with trained mental health consumer educators. The trained mental health consumer educators were recruited by The Schizophrenia Fellowship of New South Wales (SFNSW) to participate in the study. The SFNSW is a non-profit community-based organization for people living with mental illness and their caregivers and relatives. Ten tutorial sessions were held during 1 week, with approximately 25 students, 2 pharmacist tutors, and 4 consumer educators participating in each session. The consumer educators gave a brief introduction about themselves and their history with mental illness and the medications they take. Students then had an opportunity to interview the educators, with a focus on the educator's medication history and medication counseling.

EVALUATION AND ASSESSMENT

Survey Instrument

A single-group pre-post follow-up design was used to evaluate the impact of this teaching intervention. The 26-item survey instrument that was developed and tested previously by our research group was used for this study.²¹ The survey instrument comprised widely used and previously validated scales, and the face-validity of the survey instrument for use among third-year pharmacy students has been established.^{21,23} The instrument comprised 16 items relating to stigmatization and 10 items relating to professional service delivery by pharmacists. The items on professional service delivery were derived from previous studies on pharmacist attitudes towards mental illness.^{12,24} The 16 items relating to stigmatizing beliefs in severe depression and schizophrenia were based on surveys of medical students, physicians, and the public.^{25,26} The beliefs included "have themselves to blame," "unpredictable," "will never recover," "difficult to talk to," "not improve after treatment," "danger to others," "pull themselves together," and "have different feelings."

Demographic information was collected from all students who consented to participate and included age, gender, country of birth, parents' country of birth, personal and family experience of mental illness, previous work experience in pharmacy, and whether they had previously visited a psychiatric facility. The 26-item survey instrument then was administered to determine students' baseline attitudes toward mental illness. Six weeks after the intervention with mental health consumer educators,

students were asked to complete a postintervention survey instrument. Twelve months later, when the students were in their fourth year of the degree program, they were invited to complete the postintervention survey instrument again (Figure 1).

Data Analysis

Data were analyzed using SPSS, version 17.0 (IBM, New York). Individual students' responses were matched across the 3 time points of the study using unique identifiers created by the students themselves. The accuracy of data entry was checked by re-entering the data from a random sample of 10% of the survey instruments. All Likert-scale items were tested individually for normality using Kolmogorov-Smirnov and therefore parametric tests were conducted as the Likert scale data did not violate the normality assumptions. The scores from posi-

tively worded items were recoded so that all items went in the same direction.

Repeated measures ANOVA was used on the survey data from students who completed the survey instrument at all 3 time points ($n=178$). The assumptions for repeated measures ANOVA were met, and if the sphericity assumption was violated, the Huynh-Feldt degrees of freedom were reported. Post-hoc analysis was conducted using pair-wise comparisons, adjusting for multiple comparisons with Bonferroni corrections. The significance level was set at $p = 0.05$.

Survey Results

The survey instrument was completed by 225 students at baseline, 230 students at 6 weeks postintervention, and 228 students at 12 months postintervention; representing response rates of 87%, 89%, and 92%, respectively. Only the data that could be matched across all 3 time points ($n=178$) was included in the analyses. The mean age of the students at baseline was 21 years. The majority of students were female (67%), with 6% reporting a personal experience with a mental illness and 20% reporting that an immediate family member had a mental illness. More than 85% of students had prior experience working in a pharmacy (Table 1).

When comparing data from all 3 time points (baseline, 6 weeks postintervention, and 12 months postintervention), significant improvement ($p < 0.05$) was seen in all items relating to professional service delivery except for the item "My opinions about mental illness will affect my ability to provide pharmaceutical care to patients with a mental illness," the mean student response to which did

Figure 1. Outline of study to determine the impact of consumer-led mental health education on pharmacy students' stigma and attitudes towards provision of pharmaceutical services to mental health patients.

Table 1. Demographics of Third-Year Pharmacy Students Participating in a Study on the Impact of Consumer-Led Health Education ($n=178$)

Variable	No. (%) ^a	
Mean age (years)	21	
Sex	Male	57 (32.9)
	Female	116 (67.1)
Born in Australia	Yes	89 (51.4)
	No	84 (48.6)
Parents born in Australia	Yes	19 (11.0)
	No	154 (89.0)
Previously worked in pharmacy	Yes	143 (85.1)
	No	25 (14.9)
Personal experience with mental illness	Yes	11 (6.4)
	No	162 (93.6)
Family experience with mental illness	Yes	35 (20.2)
	No	138 (79.8)

^a The individual n values may vary due to a small amount of missing data.

not significantly change at any time point (Table 2). There were significant decreases in stigma, with the scores for 75% of the items for both severe depression and schizophrenia ($p < 0.05$) significantly increasing, indicating less stigmatizing attitudes at both the 6-week postintervention and 12-month follow up (Table 3).

Scores on 6 out of the 8 items relating to severe depression and 5 out of the 8 items relating to schizophrenia significantly improved at 6 weeks postintervention ($p < 0.05$). These improvements in stigmatization were maintained at the 12-month follow-up, indicating the potential long-term impact of this intervention. Improvements also were seen for the items relating to professional service

delivery, with 70% of items reporting significant improvements at 6 weeks postintervention ($p < 0.05$), and 2 of the items demonstrating further significant improvements at the 12-month follow-up ($p < 0.05$) (Table 2).

Students' responses to survey items regarding depression stigma were significantly different from those for schizophrenia at baseline ($p < 0.05$), and responses to 6 items were significantly different at both 6 weeks and 12 months postintervention (Table 3). At each of the 3 time points, students agreed more strongly that consumers with schizophrenia were more unpredictable and less likely to recover ($p < 0.05$) than a consumer with severe depression. However, students more strongly agreed that

Table 2. Third-Year Bachelor of Pharmacy Students' Attitudes Toward Provision of Pharmaceutical Services to Consumers With a Mental Illness^a

Item	n ^d	Preintervention, Mean (SD)	6-week Postintervention Mean (SD)	12-month Postintervention Mean (SD)	P ^b
Patients with schizophrenia do not want to talk to pharmacists about the duration of treatment with their medications	175	3.5 (1.0) ^{e, f}	3.8 (0.9) ^e	4.0 (0.8) ^f	<0.05
Patients with schizophrenia receive all the information they need about their medications from psychiatrist and/or GP	175	3.8 (0.9) ^f	3.9 (0.9) ^g	4.2 (0.8) ^{f, g}	<0.05
It requires too much time to adequately counsel patients with schizophrenia about their medications	176	3.4 (1.0) ^{e, f}	3.7 (0.9) ^{e, g}	3.8 (0.9) ^{f, g}	<0.05
I would feel awkward asking a patient why he/she has been prescribed an antipsychotic medication	176	3.0 (1.2) ^{e, f}	3.4 (1.0) ^e	3.3 (1.1) ^f	<0.05
A psychiatrist and or/GP is the most qualified professional to advise patients with schizophrenia about their medications	175	2.9 (1.1) ^f	3.1 (1.1)	3.2 (1.2) ^f	<0.05
My opinions about mental illness will affect my ability to provide pharmaceutical care to patients with a mental illness	174	3.4 (1.3)	3.4 (1.2)	3.4 (1.3)	0.819
Patients with schizophrenia do not want to talk to pharmacists about the side-effects of their medications	176	3.4 (0.9) ^{e, f}	3.8 (0.9) ^e	3.9 (0.8) ^f	<0.05
Patients with schizophrenia do not want to talk to pharmacists about their mental health symptoms	176	3.2 (0.9) ^{e, f}	3.7 (0.9) ^e	3.8 (0.8) ^f	<0.05
Patients with schizophrenia follow the advice of pharmacists when using their medications ^c	175	2.8 (0.8) ^{e, f}	3.3 (0.7) ^e	3.1 (0.7) ^f	<0.05
Patients with schizophrenia do not understand the information provided by pharmacists about their medications	176	3.6 (0.8) ^{e, f}	4.0 (0.6) ^e	3.9 (0.7) ^f	<0.05

^a Responses based on a 5-point scale: 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree.

^b *p* value from one-way repeated measure ANOVA analysis.

^c Item is reverse coded.

^d The individual *n* may vary due to a small amount of missing data.

^e Significant difference between preintervention and 6-week postintervention scores ($p < 0.05$).

^f Significant difference between preintervention and 12-month follow-up scores ($p < 0.05$).

^g Significant difference between 6 week post-intervention scores and 12-month follow-up scores ($p < 0.05$).

Table 3. Stigmatization of Consumers With Severe Depression or Severe Schizophrenia by Third-Year Students in a Bachelor of Pharmacy Program

Item ^a	n ^d	Preintervention, Mean (SD)	6-week Postintervention, Mean (SD)	12-month Postintervention, Mean (SD)	p ^b
Depression					
will not improve after treatment	176	4.1 (0.7) ^{e, f}	4.2 (0.6) ^e	4.3 (0.7) ^f	<0.05
are unpredictable	176	2.8 (0.9) ^{e, f}	3.2 (0.9) ^e	3.3 (1.0) ^f	<0.05
will never recover	176	4.2 (0.8)	4.2 (0.7)	4.3 (0.7)	0.051
have different feelings	173	2.9 (1.1) ^{e, f}	3.1 (1.1) ^e	3.2 (1.2) ^f	<0.05
are difficult to talk to	175	3.1 (0.9) ^{e, f}	3.4 (1.0) ^e	3.4 (1.0) ^f	<0.05
should pull themselves together	175	3.7 (1.0) ^{e, f}	3.9 (1.0) ^e	4.1 (0.9) ^f	<0.05
are not a danger to others ^c	175	2.8 (0.9) ^e	3.0 (0.9) ^e	2.9 (1.0)	<0.05
have themselves to blame	176	4.4 (0.7)	4.3 (0.8)	4.4 (0.7)	0.456
Schizophrenia					
will not improve after treatment	173	4.1 (0.5)	4.2 (0.7)	4.2 (0.6)	0.086
are unpredictable	176	2.5 (0.8) ^{e, f}	2.9 (0.9) ^e	3.0 (1.1) ^f	<0.05
will never recover	176	3.7 (0.9)	3.8 (0.9)	3.9 (0.9)	0.097
have different feelings	175	3.0 (1.1) ^{e, f}	3.4 (1.1) ^e	3.4 (1.2) ^f	<0.05
are difficult to talk to	176	3.2 (0.9) ^{e, f}	3.7 (0.9) ^e	3.6 (0.9) ^f	<0.05
should pull themselves together	175	3.8 (1.1) ^{e, f}	4.1 (0.9) ^e	4.2 (0.8) ^f	<0.05
are not a danger to others ^c	176	2.6 (0.8) ^e	3.0 (0.8) ^{e, g}	2.8 (0.9) ^g	<0.05
have themselves to blame	176	4.5 (0.6)	4.4 (0.7) ^g	4.6 (0.6) ^g	<0.05

^a 1 = Strongly agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly disagree

^b p-value from one-way repeated measure ANOVA analysis

^c Item is reverse coded

^d The individual n may vary due to a small amount of missing data

^e significant difference between pre-intervention and 6 week post-intervention scores (p<0.05)

^f significant difference between pre-intervention and 12 month follow up scores (p<0.05)

^g significant difference between 6 week post-intervention scores and 12 month follow up scores (p<0.05)

consumers with severe depression had themselves to blame ($p < 0.05$ at baseline and 12-month follow-up) compared to consumers with schizophrenia.

Focus Groups

Further evaluation of the intervention was conducted using focus groups. Focus groups are a powerful research tool which can generate results that complement quantitative data and provide greater insight into participants' attitudes and actions.²⁷ Group discussions are commonly used in health research to gain insight into peoples' experiences and can encourage a greater range of response from participants.²⁸

All students were invited by e-mail and in person during the tutorial session to participate in a series of focus groups conducted 4-6 weeks after the mental health consumer educator intervention. Three 30-minute focus groups were held with 11 participants (10 female). The focus groups were conducted using a semi-structured interview guide de-

veloped for this study. The participants were asked about their general thoughts on the use of mental health consumer educators, any impact on their attitudes or likely behaviour towards consumers with a mental illness, and if and how it changed their understanding of mental illness.

The focus group sessions were digitally audio taped and participants' comments were transcribed verbatim. The content of the transcripts were analyzed thematically with the assistance of the qualitative data software program NVivo (Version 8, QSR International, Doncaster, Australia). The content analyses were performed while listening to the original audio files.

Four main themes emerged from the qualitative data including knowledge and experience of mental illness, mental health stigma, impacts on attitudes and self-reported behavior, and the role of the pharmacist in mental health care.

Knowledge and experience. The students described the intervention as a unique experience that made mental

illness seem more real to them and helped them gain insight into what it was like to suffer from psychotic symptoms. As one participant expressed, "It is just a text book thing until you actually speak to someone. . . people are actually hearing voices and there is someone who is actually seeing someone who's not there."

Mental health stigma. All of the students reported that the use of mental health consumer educators had contributed to a decrease in their stigma towards mental illness. It also enabled them to see that consumers with a mental illness are able to lead a normal life despite their illness. As one student shared, "In the media they're portrayed as something and there is a stigma attached to it so it was good to get rid of that stigma and see that it is an actual person that you are talking to and they are exactly the same as us but they have this addition that we have to help try and treat."

Impacts on attitudes and self-reported behavior. The consumer educators helped contribute to a change in the students' attitudes towards mental illness and to remove some preconceived ideas they had about consumers with a mental illness, "I knew people with mental illnesses before and I just had a perception of what these people would be like, that they would be all like them." Some students had already made changes in the way they practiced in the pharmacy since participating in the intervention. "It has changed the way I practice and think about patients and how they feel a little more."

Role of the pharmacist in mental health care. The participants saw the pharmacist as having an important role in the care of patients with a mental illness and realized that consumers need to know that the pharmacist is someone they can talk to without being judged. The students identified a number of roles for pharmacists in mental health care including a referral role, being the first point of contact, being a nonjudgmental listener, and developing a trusting relationship. As one student expressed, "You might be one of the first people they talk to that they are feeling down or they're not sure whether this medication works." Another student emphasized the importance of the pharmacist being someone they can trust, "a pharmacist is someone they are going to have to work with to control their illness so they need to know that the pharmacist is someone they can talk to safely and not feel uncomfortable."

DISCUSSION

Many studies have called for further mental health education for pharmacists.^{12-13,21,29} The Australian Pharmacy Council's Statement of Mental Health Care Capabilities for Pharmacists is the first document of its kind in Australia demonstrating the need for further mental health education content to be included in the curriculum at both the undergraduate and postgraduate level.¹⁷

This study demonstrated that the use of trained mental health consumer educators is an effective method of delivering mental health education to pharmacy students. Our results are consistent with previous studies demonstrating that when health professionals and students come into contact with consumers with a mental illness in an educational setting, stigma is decreased and attitudes towards mental illness are improved.^{21,22,30} Given that we know health professionals often have suboptimal attitudes towards mental illness and the impact this can have on patient care,^{13,31} integrating contact with consumers into pharmacy curricula may be a useful method of addressing these barriers.

A key finding of the mental health consumer educator intervention was that the effect was maintained over the 12-month period following the intervention. The majority of the items from the survey instrument on the "provision of pharmaceutical services" and the "stigmatization of severe depression and schizophrenia" showed significant improvements after the intervention and those improvements remained at the 12-month follow-up. Previous studies have only measured the short-term benefits of education programs to decrease mental health stigma.^{21-22, 32} This study demonstrates that consumer-led education in mental health can provide sustainable reductions in stigma.

The qualitative data from the study provides further support that the inclusion of consumers in mental health pharmacy education can lead to improvements in stigmatizing attitudes towards mental illness. Participants in the focus groups indicated that the intervention changed the way they practiced in the pharmacy setting and helped them better understand the challenges surrounding the management of mental illnesses.

The mental health consumer educators gave students real-life insight into what it is like to have a mental illness in a format that differed greatly from their usual mental health education. The consumer educators shared the different ways consumers cope with their illness, the important role that pharmacists need to play in supporting people with mental illnesses, and how they were real people who led normal lives despite their illness.

While stigma and poor attitudes toward mental illness are known to interfere with pharmacists' professional practice, contact with the consumer educators reduced students' stigma.^{4, 33} The type and quality of the contact with mental health consumers appears to be an important factor in improving attitudes. Psychiatrists have similar suboptimal attitudes to members of the public, yet they have regular contact with mental health consumers.³³ As with previous studies, the university-based consumer-led intervention improved attitudes.³⁴ This finding provides further evidence that the type and quality of contact with

mental health consumers is a determining factor in stigma reduction. Hence, attitudes may not change with pharmacist contact with these patients in the pharmacy workplace alone. This is consistent with previous research demonstrating that clinical placements or anti-stigma programs are not enough to reduce stigma and improve attitudes towards mental illness.³⁰

Interestingly, there were significant improvements in students' scores on the severe depression items as well as schizophrenia items even though most of the consumer educators had a psychotic illness rather than an affective disorder. This indicates that the students may have extrapolated the cases to mental illness in general. When the schizophrenia and severe depression items are compared at all 3 time points, there were significant differences for a number of items. The students agreed more strongly that people with schizophrenia "are unpredictable" and "will never recover"; while people with severe depression "have different feelings," "are difficult to talk to," and should "pull themselves together." These trends remained unchanged before and after the intervention, which may indicate that more education is needed to address these stigmatizing attitudes.

Students' scores on all items relating to the provision of pharmaceutical services for consumers with a mental illness significantly improved, except the item relating to their opinions about mental illness and the effect on provision of pharmaceutical services. Although their attitudes toward mental illness significantly improved after the intervention, the scores on this item indicate that students did not regard their opinions about mental illness as an important factor in their ability to provide mental health care services. This finding is similar to that in a Finnish study that found pharmacists did not believe their own attitudes were a barrier in communicating with patients.³⁵

An important strength of our study was that we investigated whether improved attitudes following a consumer-led intervention persisted over a 12-month period. Previous studies in this area have not investigated the long-term impact of consumer involvement in pharmacy education. However, there are a number of limitations to our study that must be taken into account when interpreting the results. We did not have a comparison group for this study. Due to the success of our previous research, we ethically had to offer the intervention to all pharmacy students. However, our data is stable compared to previously published data in this area and our key outcomes are supported by the focus group data.^{21,23,36,37}

During the 12 months following the intervention, the students completed their final year of the bachelor of pharmacy program and undertook clinical placements, and many were employed in community pharmacies. We could

not control for the influence of these outside factors on the results of this research. Nevertheless, our results demonstrate the potential long-term impact of the intervention on the students' future professional practice as pharmacists. It is unlikely that the improvements and persistence in students' attitudes were due to other aspects of their fourth-year pharmacy education. This conclusion is supported by a previous study which reported that prior to receiving consumer-led education, third-year pharmacy students and pharmacy graduates had similar attitudes toward people with schizophrenia and severe depression.²³

The focus groups only had a small number of participants; however, the data gained from this part of the research enabled us to further analyze the impact of this teaching intervention. Although the survey instrument required students to have some basic understanding of schizophrenia and depression; they received lectures on mental health and psychotropic medications prior to the study. The survey was conducted anonymously; however, there may have been some apprehension among students about reporting personal and family experiences with mental illness, so the true incidence may have been underreported.

CONCLUSION

Contact with mental health consumers in an educational setting may provide long-term decreases in stigma towards people with schizophrenia and severe depression and improve attitudes towards providing pharmaceutical services for these patients. Further research with pharmacists is required to ascertain whether these improvements are translated into actual behavior change in practice.

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